

# Colorado Department of Public Health and Environment

# **OPERATING PERMIT**

Ft. St. Vrain Station

First Issued: January 1, 2000

Renewed: January 1, 2011

Last Revised: September 9, 2011

# AIR POLLUTION CONTROL DIVISION COLORADO OPERATING PERMIT

FACILITY NAME: Ft. St. Vrain Station OPERATING PERMIT NUMBER

FACILITY ID: 1230023

RENEWED: January 1, 2011 EXPIRATION DATE: January 1, 2016

MODIFICATIONS: See Appendix F of Permit

Issued in accordance with the provisions of Colorado Air Pollution Prevention and Control Act, 25-7-101 <u>et seq.</u> and applicable rules and regulations.

970PWE180

ISSUED TO: PLANT SITE LOCATION:

Public Service Company of Colorado 16805 County Road 19½ 1800 Larimer Street Platteville, CO 80651

Denver, CO 80202 Weld County

INFORMATION RELIED UPON

Operating Permit Renewal Application

Received: May 19, 2009

And Additional Information Received: June 2, 2009, March 23, August 12 and September 16, 2010

Nature of Business: Combustion Gas Turbine Electric Generating Station

Primary SIC: 4911

RESPONSIBLE OFFICIAL FACILITY CONTACT PERSON

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SUBMITTAL DEADLINES

Semi-Annual Monitoring Periods: January 1 – June 30, July 1 – December 31

Semi-Annual Monitoring Report: Due on August 1 2011 and February 2012 & subsequent years

Annual Compliance Period: January 1 – December 31

Annual Compliance Certification: Due on February 1, 2012 & subsequent years

Note that the Semi-Annual Monitoring Reports and Annual Compliance Certifications must be received at the Division office by 5:00 p.m. on the due date. Postmarked dates will not be accepted for the purposes of determining the timely receipt of those reports/certifications.

FOR ACID RAIN SUBMITTAL DEADLINES SEE SECTION III.4 OF THIS PERMIT

# **TABLE OF CONTENTS:**

SECTIO	N I - General Activities and Summary	1
1.	Permitted Activities	1
2.	Alternative Operating Scenarios	2
3.	Nonattainment Area New Source Review (NANSR) and Prevention of Significant	
	Deterioration (PSD)	
4.	Accidental Release Prevention Program (112(r))	3
5.	Compliance Assurance Monitoring (CAM)	3
6.	Summary of Emission Units	4
SECTIO	ON II - Specific Permit Terms	6
1.	T002 & T003 – Two (2) Combustion Turbines Capable of Simple or Combined Cycle	
	Operation	6
2.	T004 –Combustion Turbine Capable of Simple or Combined Cycle Operation	
3.	B001 - Auxiliary Boiler	
4.	M001 - Cooling Water and Service Water Towers	40
5.	Continuous Emission Monitoring Systems (CEMS)	
6.	M002 - Gasoline Storage Tank, 500 gallons aboveground	
7.	M002 – Cold Cleaner Solvent Vats	
8.	T005 & T006 – Two (2) Simple Cycle Combustion Turbines	
9.	M004 - Diesel Fuel Fired Internal Combustion Engines	
SECTIO	ON III - Acid Rain Requirements	62
1.	Designated Representative and Alternate Designated Representative	
2.	Sulfur Dioxide Emission Allowances and Nitrogen Oxide Emission Limitations	
3.	Standard Requirements	
3. 4.	Reporting Requirements	
<del></del> . 5.	Comments, Notes and Justifications	
	ON IV - Permit Shield	
1.	Specific Non-Applicable Requirements	
2.	General Conditions	
3.	Streamlined Conditions	69
<b>SECTIO</b>	NV - General Permit Conditions	70
1.	Administrative Changes	70
2.	Certification Requirements	70
3.	Common Provisions	70
4.	Compliance Requirements	74
5.	Emergency Provisions	75
6.	Emission Controls for Asbestos	75
7.	Emissions Trading, Marketable Permits, Economic Incentives	75
8.	Fee Payment	76
9.	Fugitive Particulate Emissions	76
10.	Inspection and Entry	
11.	Minor Permit Modifications	76
12.	New Source Review	
13.	No Property Rights Conveyed	
14.	Odor	77

# **TABLE OF CONTENTS:**

15.	Off-Permit Changes to the Source	77
16.	Opacity	
17.	Open Burning	
18.	Ozone Depleting Compounds	77
19.	Permit Expiration and Renewal	
20.	Portable Sources	78
21.	Prompt Deviation Reporting	78
22.	Record Keeping and Reporting Requirements	78
23.	Reopenings for Cause	79
24.	Section 502(b)(10) Changes	80
25.	Severability Clause	80
26.	Significant Permit Modifications	80
27.	Special Provisions Concerning the Acid Rain Program	80
28.	Transfer or Assignment of Ownership	80
29.	Volatile Organic Compounds	81
30.	Wood Stoves and Wood burning Appliances	81
A PPEN	IDIX A - Inspection Information	1
	ections to Plant:	
	ety Equipment Required:	
	ility Plot Plan:	
	of Insignificant Activities:	
	9	
	VDIX B	
-	orting Requirements and Definitions	
	nitoring and Permit Deviation Report - Part I	
	nitoring and Permit Deviation Report - Part II	
MOI	mornig and Fernit Deviation Report - Fart III	10
	NDIX C	
Requ	uired Format for Annual Compliance Certification Reports	1
APPEN	IDIX D	
	ification Addresses	
A DDENI		1
	DIX E	
Pern	nit Acronyms	1
APPEN	NDIX F	1
Pern	mit Modifications	1
A PPEN	IDIX G	1
	C Correlation Fauations	1

## **SECTION I - General Activities and Summary**

### 1. Permitted Activities

1.1 This facility is a decommissioned nuclear power generating facility. Nuclear operations ceased at this facility in 1989 and decommissioning was completed in 1996. The repowering of this facility utilized a large portion of the non-nuclear assets such as the steam turbine, the cooling water system, condensate and feed water system, water treatment systems, and a substation. This facility consists of five (5) natural gas fired combustion turbines and three (3) heat recovery steam generators (HRSG). The capacity of the steam turbine is 330 megawatts (MW). The output rating of the entire plant varies based on ambient temperature with more generation in the winter and less generation in the summer. The facility generates approximately 965 MW (summer rating) of electricity. The turbines are numbered as follows: T001 (turbine No.1) is the steam turbine, T002 (turbine No. 2) is the No. 1 combustion turbine, T003 (turbine No. 3) is the No. 2 combustion turbine, T004 (turbine No. 4) is the No. 3 combustion turbine, T005 (turbine No. 5) is the No. 4 combustion turbine and T006 (turbine No. 6) is the No. 5 combustion turbine. Combustion turbines 2 and 3 each generate approximately 135 MW of electricity and each HSRG, which includes duct burners for supplemental firing, will add approximately 100 MW of electrical capacity. Combustion turbine 4, which commenced operation in April 2001, generates approximately 135 MW of electricity and the HRSG, which includes a duct burner for supplemental firing, will add approximately 100 MW of electrical capacity. These combustion turbines and HRSG combinations can be run in three modes: simple cycle (combustion turbine only), combined cycle (combustion turbine with HRSG) with no fuel fired in the duct burners and combined cycle (combustion turbine with HRSG) with fuel fired in the duct burners. In simple cycle operation, exhaust from the combustion turbine is discharged through the bypass stack. In combined cycle operation, the exhaust gas from the turbine passes through the HRSG first and then exits out the HRSG stack. Combustion turbines No. 5 and 6, which commenced operation in April 2009, each generate approximately 146 MW. Turbines 5 and 6 can only operate in simple cycle mode. In addition to the combustion turbines, significant emission units at this facility consist of an auxiliary boiler fueled by natural gas, one cooling water tower, one service water tower, a 500 gal gasoline tank, cold cleaner solvent vats, two (2) diesel-fired engines driving an emergency generator and one (1) diesel-fired engine driving an emergency fire pump.

The facility is located approximately three miles north and west of Platteville, Colorado. The area in which the plant operates is designated as attainment for all criteria pollutants except ozone. It is classified as non-attainment for ozone and is part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.1.

There are no affected states within 50 miles of the plant. Rocky Mountain National Park, Eagle's Nest National Wilderness Area and Rawah National Wilderness Area, Federal Class I designated areas, are within 100 kilometers of the plant.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 1.2 Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air pollutants from this facility in accordance with the requirements, limitations, and conditions of this permit.
- 1.3 This Operating Permit incorporates the applicable requirements contained in the underlying construction permits, and does not affect those applicable requirements, except as modified during review of the application or as modified subsequent to permit issuance using the modification procedures found in Regulation No. 3, Part C. These Part C procedures meet all applicable substantive New Source Review requirements of Part B. Any revisions made using the provisions of Regulation No. 3, Part C shall become new applicable requirements for purposes of this Operating Permit and shall survive reissuance. This Operating Permit incorporates the applicable requirements (except as noted in Section II) from the following Colorado Construction Permits: 94WE609 (PSD), 97WE0189, 99WE0762 PSD and 07AD1100.
- 1.4 All conditions in this permit are enforceable by US Environmental Protection Agency, Colorado Air Pollution Control Division (hereinafter Division) and its agents, and citizens unless otherwise specified. **State-only enforceable conditions are:** Permit Condition Number(s): Section II Conditions 1.13, 2.14 and 8.14 (Opacity) and Section V Conditions 3.d, 3.g (last paragraph), 14 and 18 (as noted).
- 1.5 All information gathered pursuant to the requirements of this permit is subject to the Recordkeeping and Reporting requirements listed under Condition 22 of the General Conditions in Section V of this permit.

# 2. Alternative Operating Scenarios

- 2.1 The permittee shall be allowed to make the following changes to its method of operation without applying for a revision of this permit.
  - 2.1.1 Turbines No. 2, 3 and 4 may be operated as follows:
    - 2.1.1.1 The combustion turbines may be operated as simple cycle combustion turbines as specified under Section II.
    - 2.1.1.2 The combustion turbines may be operated as combined cycle combustion turbines with no supplemental fuel being fired in the duct burners as specified under Section II.
    - 2.1.1.3 The combustion turbines may be operated as combined cycle combustion turbines with supplemental fuel being fired in the duct burners as specified under Section II.
- 2.2 The facility must contemporaneously with making a change from one operating scenario to another, maintain records at the facility of the scenario under which it is operating (Colorado Regulation No. 3, Part A, Section IV.A.1).

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

# 3. Nonattainment Area New Source Review (NANSR) and Prevention of Significant Deterioration (PSD)

- 3.1 This facility is categorized as a PSD major stationary source (potential to emit of PM,  $PM_{10}$ ,  $NO_X$  and  $CO \ge 100$  tons/year). Future modifications at this facility resulting in a significant net emissions increase (see Colorado Regulation No. 3, Part D, Sections II.A.26 and 42) or a modification which is major by itself (Potential to Emit  $\ge 100$  tons/year) for any pollutant listed in Colorado Regulation 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements.
- 3.2 This source is categorized as a NANSR major stationary source (Potential to Emit of  $NO_X \ge 100$  tons/year). Future modifications at this facility resulting in a significant net emissions increase (see Regulation No. 3, Part D, Sections II.A.26 and 42) for VOC or  $NO_X$  or a modification which is major by itself (Potential to Emit  $\ge 100$  tons/year of either VOC or  $NO_X$ ) may result in the application of the NANSR review requirements.
- 3.3 There are no other Operating Permits associated with this facility for purposes of determining applicability of NANSR and PSD review regulations.

# 4. Accidental Release Prevention Program (112(r))

4.1 Based on the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Program (Section 112(r) of the Federal Clean Air Act).

## 5. Compliance Assurance Monitoring (CAM)

5.1 The following emission points at this facility use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-control emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the provisions of the CAM program as set forth in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV:

Unit T004 – Combustion Turbine

See Section II, Condition 2.9 for compliance assurance monitoring requirements.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

# 6. Summary of Emission Units

6.1 The emissions units regulated by this permit are the following:

Emission Unit No./ Facility ID.	AIRS Stack Number	Description	Startup Date	Pollution Control Device
T002	004	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 296677, rated at 1773 mmBtu/hr (turbine 1,223 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.	February 1996 (simple cycle operation) March 1998 (combined cycle operation)	Dry Low NO <sub>X</sub> Burners
T003	005	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 297096, rated at 1823 mmBtu/hr (turbine 1,373 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.	January 1999 (simple cycle operation) April 1999 (combined cycle operation)	Dry Low NO <sub>X</sub> Burners
T004	008	General Electric Combustion Turbine, Model PG7241 (FA), Serial No. 297457, rated at 1953 mmBtu/hr (turbine 1,531 mmBtu/hr and duct burner 422 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with One (1) Vogt-NEM Natural Gas Fired Duct Burner.	April 2001	Turbine - Dry Low NO <sub>X</sub> HRSG - Selective Catalytic Reduction (SCR)
B001	001	Babcock and Wilcox, Model FM-1656, External Combustion Auxiliary Boiler, Serial No. NB22845, Rated at 70.23 mmBtu/hr. Natural Gas Fired.	1969, modified September 1997 to burn only natural gas	Uncontrolled
M001	006	One (1) Marley Cooling Water Tower, Model No. Cross-Flow DF-664, Design Rate of 156,000 gpm and One (1) Marley Service Water Tower, Model No. 6-48-3-02, Design Rate of 15,000 gpm.	1976	Drift Eliminators
M002	N/A	Gasoline Storage Tank, 500 gallons, aboveground		Uncontrolled
M003	N/A	Cold Cleaner Solvent Vats		Uncontrolled
T005	010	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298106, rated at 1,467 mmBtu/hr, Natural Gas Fired.	April 2009	Advanced Dry Low NO <sub>X</sub> Combustion System
T006	011	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298107, rated at 1,467 mmBtu/hr, Natural Gas Fired.	April 2009	Advanced Dry Low NO <sub>X</sub> Combustion System

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Emission Unit No./ Facility ID.	AIRS Stack Number	Description	Startup Date	Pollution Control Device
M004	N/A	Two (2) Caterpillar, Model No. SP321P00, Serial Nos. 126906 and 126907, diesel-fired engines, each rated at 1,800 hp, with a combined fuel rate of 200 gal/hr. The engines are run together to drive an emergency generator. One (1) Cummins, Model No. 6BTA5.963, Serial No. 46927201, rated at 255 hp with fuel rate of 3 gal/hr. The engine runs an emergency fire pump.		Uncontrolled

# **SECTION II - Specific Permit Terms**

1. T002 & T003 – Two (2) Combustion Turbines Capable of Simple or Combined Cycle Operation

Simple Cycle - Two (2) Combustion Turbines

Combined Cycle (No Supplemental Fuel) - Two (2) Combustion Turbines & Two (2) Heat Recovery Steam Generators (HRSG) with No Fuel Fired in Duct Burners

Combined Cycle (With Supplemental Fuel) – Two (2) Combustion Turbines & Two (2) Heat Recovery Steam Generators (HRSG) with Fuel Fired in Duct Burners

Unless otherwise specified, the limitations identified are per combustion turbine/HRSG

Parameter	Permit	Lim	itations	Compliance	Mon	itoring
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
BACT Requirements	1.1	N/A	N/A	N/A	See Con	dition 1.1
NOX	1.2.	Cycle Mode – No Fuel:  15 ppmvd @ 15% average, except as During Startup and 100 ppmvd @ 15 average  During Combustive Testing (not to exfor all three turbed) 100 ppmvd @ 15 average  Combined Cycle Supplemental Fuel 17 ppmvd @ 15% average, except as During Startup and 100 ppmvd @ 15 average  During Combustive Tombustive Tombustiv	o O <sub>2</sub> on a 1-hr s provided for below d Shutdown: % O <sub>2</sub> on a 1-hr on Tuning and ceed 90 hrs/yr per bines combined): % O <sub>2</sub> on a 1-hr Mode – With lel: lo O <sub>2</sub> on a 1-hr s provided for below d Shutdown: % O <sub>2</sub> on a 1-hr on Tuning and ceed 90 hrs/yr per bines combined):	N/A	Continuous Emission Monitoring System	Continuously

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Parameter	Permit	Lim	itations	Compliance	Moni	toring
Turumeter	Condition Number	Short Term		Emission Factor	Method	Interval
СО	1.3.	Simple Cycle Mode or Combined Cycle Mode – No Supplemental Fuel:  15 ppmvd @ 15% O <sub>2</sub> on a 1-hr average, except as provided for below During Startup and Shutdown:  1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  During Combustion Tuning and Testing (not to exceed 90 hrs/yr per for all three turbines combined):  1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  Combined Cycle Mode – With Supplemental Fuel:  48 ppmvd @ 15% O <sub>2</sub> on a 1-hr average, except as provided for below During Startup and Shutdown:  1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  During Combustion Tuning and Testing (not to exceed 90 hrs/yr per for all three turbines combined):  1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr		N/A	Continuous Emission Monitoring System	Continuously
SO <sub>2</sub>	1.4.	N/A 465.4 tons/yr  For Each Combustion Turbine: 0.35 lbs/mmBtu, on a 3-Hour Rolling Average  For Each Combustion Turbine: 150 ppmvd @ 15% O <sub>2</sub> or Use of Fuel Which Contains Less than 0.8 Weight % Sulfur  For Each Duct Burner: 0.20 lbs/mmBtu, on a 30-Day Rolling Average		N/A	Fuel Restriction	Only Pipeline Quality Natural Gas is Used as Fuel
		N/A	4.7 tons/yr		Continuous Monitoring System	Continuously

Parameter	Permit Condition Number	Lin Short Term	nitations n Long Term	Compliance Emission Factor	Moni Method	toring Interval
VOC	1.5.	Simple Cycle and Combined Cycle  No Supplemental Fuel:  1.4 ppmvd @ 15% O <sub>2</sub> , on a 1-Hour Average  Combined Cycle – With Supplemental Fuel:  1.7 ppmvd @ 15% O <sub>2</sub> , on a 1-Hour Average		N/A	Continuous Monitoring System	Continuously
PM	1.6.	0.1 lbs/mmBtu, (3) 2  For Each Combouct Bur 0.1 lbs/mmBtu, (3) 2	21.4 tons/yr mbustion Turbine: the average of three 1-hr tests bustion Turbine and ner Together: the average of three 1-hr tests  Duct Burner:	N/A	Fuel Restriction	Only Pipeline Quality Natural Gas is Used as Fuel
		0.03 lbs/mmBtu	, the average of three 2-hr tests 39.4 tons/yr	See Condition 1.6.	Recordkeeping, Calculation and Performance Testing	Monthly, Every Five (5) Years
PM <sub>10</sub>	1.7.	9 lbs/hr	39.4 tons/yr	See Condition 1.7.	Recordkeeping, Calculation and Performance Testing	Monthly, Every Five (5) Years
Natural Gas Usage	1.8.	N/A	Simple Cycle and/or Combined Cycle Without Supplemental Fuel: 12,507 mmSCF/yr Combined Cycle With Supplemental Fuel: 16,090 mmSCF/yr	N/A	Recordkeeping	Monthly
Sulfur Content of Natural Gas	1.9.	N/A	N/A	N/A	See Cond	dition 1.9.
Continuous Emission Monitoring System Requirements	1.10.	N/A	N/A	N/A	See Cond	lition 1.10

Parameter	Permit	Lim	itations	Compliance	Moni	toring
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
NSPS General Provisions	1.11.	N/A	N/A	N/A	As Required by NSPS General Provisions	Subject to NSPS General Provisions
Performance Test Requirements	1.12.	N/A	N/A	N/A	EPA Reference Methods	See Condition 1.12.
Opacity - State Only	1.13.	Not to Exceed 20%		N/A	Fuel Restriction	Only Pipeline Quality Natural Gas is Used as Fuel
Opacity	1.14.	Not to Exceed 20% Except as Provided for in 1.15 Below		N/A		
Opacity	1.15.	For Certain Operational Activities - Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes		N/A		
NSPS Opacity Applies to Duct Burner Only	1.16.	Not to Exceed 20% (6-minute average), Except for One Six Minute Average Not to Exceed 27% Per Hour		N/A		
Acid Rain Requirements	1.17.	See Section III of this Per		rmit	Certification	Annually

- 1.1 **These combustion turbines/HRSGs/duct burners** are subject to the requirements of the Prevention of Significant Deterioration (PSD) Program.
  - 1.1.1 Best Available Control Technology (BACT) shall be applied for control of Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), Volatile Organic Compounds (VOC) and Particulate Matter (PM and PM<sub>10</sub>). BACT has been determined as follows:
    - 1.1.1.1 BACT for NO<sub>X</sub> has been determined to be Dry Low NO<sub>X</sub> (DLN) Combustion Systems with emission limits as identified in Condition 1.2.1 (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). The DLN combustion systems shall be operated and maintained in accordance with manufacturer's recommendations and good engineering practices.
    - 1.1.1.2 BACT for CO has been determined to be good combustion practices/monitoring systems capable of meeting the emission limitations in Condition 1.3.1 (Colorado Construction Permit 94WE609 PSD).
    - 1.1.1.3 BACT for VOC has been determined to be good combustion practices/monitoring systems capable of meeting the emission limitations in Condition 1.5.1 (Colorado Construction Permit 94WE609 PSD).

- 1.1.1.4 BACT for PM and PM<sub>10</sub> has been determined to be use of pipeline quality natural gas (Colorado Construction Permit 94WE609 PSD).
- 1.2 Nitrogen Oxide (NO<sub>X</sub>) emissions shall not exceed the following limitations:
  - 1.2.1 The BACT emission limits **for each combustion turbine/HRSG/duct burner** are as follows (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3):
    - 1.2.1.1 Except as provided for in Conditions 1.2.1.3 and 1.2.1.4 below, emissions of NO<sub>X</sub> shall not exceed 15 ppmvd at 15 % O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in either simple cycle mode or combined cycle mode without supplemental fuel.**
    - 1.2.1.2 Except as provided for in Conditions 1.2.1.3 and 1.2.1.4 below, emissions of  $NO_X$  shall not exceed 17 ppmvd at 15 %  $O_2$ , on a 1-hour average. This standard applies when operating in combined cycle mode with supplemental fuel.
    - 1.2.1.3 During periods of startup and shutdown emissions of  $NO_X$  shall not exceed 100 ppmvd at 15%  $O_2$ , on a 1-hr average.
    - 1.2.1.4 During periods of combustion tuning and testing emissions of NO<sub>X</sub> shall not exceed 100 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. Use of this NO<sub>X</sub> emission limit for purposes of combustion tuning and testing shall not exceed 90 hours in any calendar year **for all three turbines combined**. Records of the number of hours each turbine undergoes combustion tuning and testing shall be recorded and maintained and made available to the Division upon request.
    - 1.2.1.5 "Startup" means the setting in operation of any air pollution source for any purpose. Setting in operation for these turbines begins when fuel is first combusted in the turbine or when commencing a combined cycle startup from simple cycle operation and ends 15 minutes after the turbine reaches Mode 6 operation. Mode 6 refers to the condition when all six burner nozzles are being fired. The station control system and each unit's data acquisition and handling system (DAHS) utilized by the continuous emission monitoring systems indicates which Mode the turbine is operating in. A record of when Mode 6 combustion configuration plus 15 minutes is achieved is stored in each unit's DAHS.
    - 1.2.1.6 "Shutdown" means the cessation of operation of any air pollution source for any purpose. The cessation of operation for these turbines begins when the command signal is initiated to shutdown the unit and ends when fuel is no longer being fired in the turbine.
    - 1.2.1.7 "Combustion Tuning and Testing" means the operation of the unit for the purpose of performing combustion tuning and testing operations after a

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

unit overhaul or as part of routine maintenance operations. Combustion tuning and testing can occur throughout the range of the operating conditions.

Compliance with these NO<sub>X</sub> limitations shall be monitored using the continuous emission monitoring system (CEMS) required by Condition 1.10, as follows:

- 1.2.1.8 Except as provided for in Condition 1.2.1.9, all valid CEMS concentration (ppm) data points, excluding startup and shutdown data points shall, at the end of each clock hour be summarized to generate the average NO<sub>X</sub> concentration. Each clock hour average NO<sub>X</sub> concentration shall be compared to the limitations in Conditions 1.2.1.1, 1.2.1.2 or 1.2.1.4, as appropriate.
- 1.2.1.9 All valid CEMS concentration (ppm) data points, excluding non-startup and non-shutdown data points shall, at the end of each clock hour be summarized to generate the average NO<sub>X</sub> concentration. Each clock hour average NO<sub>X</sub> concentration shall be compared to the limitation in Condition 1.2.1.3.

In the event that a startup ends within a clock hour or shutdown begins within a clock hour, all non-startup and/or non-shutdown concentration (ppm) data points within that clock hour shall be averaged together to generate the average  $NO_X$  concentration and that average concentration shall be compared to the limitations in Conditions 1.2.1.1, 1.2.1.2 or 1.2.1.4, as appropriate.

- 1.2.1.10 Within 60 days after renewal permit issuance [January 1, 2011], the data acquisition and handling system (DAHS) shall be programmed to address the revised compliance calculations set forth in Conditions 1.2.1.8 and 1.2.1.9 for the emission limits in Conditions 1.2.1.1 through 1.2.1.4. Prior to re-programming the DAHS, all valid CEMS concentration data points shall, at the end of each hour, be summarized to generate the average NO<sub>X</sub> concentration. The emission limits in Conditions 1.2.1.1, 1.2.1.2 and 1.2.4 apply to any clock hour of operation that does not include any data from a startup or shutdown.
- 1.2.1.11 The emission limitation in Condition 1.2.1.4 applies to any clock hour in which combustion tuning and testing activities occur.
- 1.2.2 Nitrogen Oxide (NO<sub>X</sub>) emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 496.1 tons/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). Compliance with this requirement shall be monitored using the Continuous Emission Monitoring System (CEMS) required by Condition 1.10.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.3 Carbon Monoxide (CO) emissions shall not exceed the following limitations:
  - 1.3.1 The BACT Carbon Monoxide (CO) emission limit **for each combustion turbine/HRSG/duct burner** is as follows (94WE609 PSD, as modified under the provisions of Section I, Condition 1.3):
    - 1.3.1.1 Except as provided for in Conditions 1.3.1.3 and 1.3.1.4 below, emissions of CO shall not exceed 15 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in either simple cycle mode or combined cycle mode without supplemental fuel.**
    - 1.3.1.2 Except as provided for in Conditions 1.3.1.3 and 1.3.1.4 below, emissions of CO shall not exceed 48 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in combined cycle mode with supplemental fuel.**
    - 1.3.1.3 During periods of startup and shutdown emissions of CO shall not exceed 1,000 ppmvd at 15% O<sub>2</sub>, on a 1-hr average and 2,060 lbs/hr. In the event that emissions of CO exceed 1,000 ppmvd at 15% O<sub>2</sub>, it shall be considered a violation of the CO BACT emission limit if CO emissions exceed 2,060 lbs/hr and not a violation if emissions are less than or equal to 2.060 lbs/hr.
    - 1.3.1.4 During periods of combustion tuning and testing emissions of CO shall not exceed 1,000 ppmvd at 15% O<sub>2</sub>, on a 1-hour average and 2,060 lbs/hr. In the event that emissions of CO exceed 1,000 ppmvd at 15% O<sub>2</sub>, it shall be considered a violation of the CO BACT emission limit if CO emissions exceed 2,060 lbs/hr and not a violation if emissions are less than or equal to 2,060 lbs/hr. Use of this CO emission limit for purposes of combustion tuning and testing shall not exceed 90 hours in any calendar year **for all three turbines combined**. Records of the number of hours each turbine undergoes combustion tuning and testing shall be recorded and maintained and made available to the Division upon request.
    - 1.3.1.5 "Startup" shall have the same definition as provided for in Condition 1.2.1.5.
    - 1.3.1.6 "Shutdown" shall have the same definition as provided for in Condition 1.2.1.6.
    - 1.3.1.7 "Combustion Tuning and Testing" shall have the same definition as provided for in Condition 1.2.1.7.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

Compliance with these CO limitations shall be monitored using the continuous emission monitoring system (CEMS) required by Condition 1.10, as follows:

- 1.3.1.8 Except as provided for in Condition 1.3.1.9, all valid CEMS concentration (ppm) data points, excluding startup and shutdown data points shall, at the end of each clock hour be summarized to generate the average CO concentration. Each clock hour average CO concentration shall be compared to the limitations in Conditions 1.3.1.1, 1.3.1.2 or 1.3.1.4, as appropriate.
- 1.3.1.9 All valid CEMS concentration (ppm) data points, excluding non-startup and non-shutdown data points shall, at the end of each clock hour be summarized to generate the average CO concentration. Each clock hour average CO concentration shall be compared to the limit in Condition 1.3.1.3.

In the event that a startup ends within a clock hour or shutdown begins within a clock hour, all non-startup and/or non-shutdown concentration (ppm) data points within that clock hour shall be averaged together to generate the average CO concentration and that average concentration shall be compared to the limitations in Conditions 1.3.1.1, 1.3.1.2 or 1.3.1.4, as appropriate.

- 1.3.1.10 Within 60 days after renewal permit issuance [January 1, 2011], the data acquisition and handling system (DAHS) shall be programmed to address the revised compliance calculations set forth in Conditions 1.3.1.8 and 1.3.1.9 for the emission limits in Conditions 1.3.1.1 through 1.3.1.4. Prior to re-programming the DAHS, all valid CEMS concentration data points shall, at the end of each hour, be summarized to generate the average CO concentration. The emission limits in Conditions 1.3.1.1, 1.3.1.2 and 1.3.1.4 apply to any clock hour of operation that does not include any data from a startup or shutdown.
- 1.3.1.11 The emission limitation in Condition 1.3.1.4 applies to any clock hour in which combustion tuning and testing activities occur.
- 1.3.2 Carbon Monoxide (CO) emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 465.4 tons/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). Compliance with this requirement shall be monitored using the Continuous Emission Monitoring System (CEMS) required by Condition 1.10.

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

1.4 Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed the following limitations:

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

- 1.4.1 Sulfur Dioxide (SO<sub>2</sub>) emissions **from each combustion turbine** shall not exceed 0.35 lbs/mmBtu, on a 3-hour rolling average (Colorado Regulation No. 1, Section VI.B.4.c.(ii) and VI.B.2). In the absence of credible evidence to the contrary, compliance with the sulfur dioxide limitation is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines.
- 1.4.2 **Each combustion turbine** shall meet one of the following requirements:
  - 1.4.2.1 Sulfur Dioxide (SO<sub>2</sub>) emissions from each combustion turbine shall not exceed 150 ppmvd at 15% O<sub>2</sub> measured at ISO Standard Ambient Conditions (Colorado Construction Permit 94WE609 PSD) **OR**
  - 1.4.2.2 No fuel, which contains sulfur in excess of 0.8 percent by weight, shall be used in these combustion turbines (40 CFR Part 60, Subpart GG § 60.333(b), as adopted by reference in Colorado Regulation No. 6, Part A).

In the absence of credible evidence to the contrary, compliance with the above requirements is presumed since only pipeline quality natural gas is permitted to be used as fuel. The natural gas used as fuel shall meet the requirements in Condition 1.9.

- 1.4.3 Sulfur Dioxide (SO<sub>2</sub>) emissions **from each duct burner** shall not exceed 0.20 lbs/mmBtu on a 30-day rolling average (40 CFR Part 60 Subpart Da § 60.43Da(b)(2), as adopted by reference in Colorado Regulation No. 6, Part A). In the absence of credible evidence to the contrary, compliance with the sulfur dioxide limitations is presumed since only pipeline quality natural gas is permitted to be used as fuel in the duct burners.
- 1.4.4 Sulfur Dioxide (SO<sub>2</sub>) emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 4.7 tons/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). Compliance with the annual limitation shall be monitored using the continuous monitoring system required by 40 CFR Part 75, as adopted by reference in Colorado Regulation No. 18

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.5 Volatile Organic Compound (VOC) emissions shall not exceed the following limitations:
  - 1.5.1 The BACT Volatile Organic Compound (VOC) emission limit **for each combustion turbine/HRSG/duct burner** is as follows (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3):
    - 1.5.1.1 Emissions of VOC shall not exceed 1.4 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in either simple cycle**

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

## mode or combined cycle mode without supplemental fuel.

1.5.1.2 Emissions of VOC shall not exceed 1.7 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. This standard applies when operating in combined cycle mode with supplemental fuel.

Compliance with the VOC limitations shall be monitored using the VOC correlation (VOC emissions vs. heat input) that has been approved by the Division and programmed into the data acquisition and handling system (DAHS). The data in the DAHS shall at the end of each hour, be summarized to generate the average VOC concentration. The equations used in the VOC correlation are included in Appendix G of this permit.

1.5.2 Volatile Organic Compounds emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 21.4 tons/yr (Colorado Construction Permit 94WE609 PSD). Compliance with the VOC limitation shall be monitored using the VOC correlation (VOC emissions vs. heat input) that has been approved by the Division and programmed into the data acquisition and handling system (DAHS). The equations used in the VOC correlation are included in Appendix G of this permit.

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.6 Particulate Matter (PM) emissions shall not exceed the following limitations:
  - 1.6.1 Particulate Matter (PM) emissions **from each combustion turbine** shall not exceed 0.1 lbs/mmBtu, the average of three (3) 1-hr tests (Colorado Regulation No. 1, Section III.A.1.c). In the absence of credible evidence to the contrary, compliance with the particulate matter limitation is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines.
  - Particulate Matter (PM) emissions **from each combustion turbine and duct burner together** shall not exceed 0.1 lbs/mmBtu, the average of three (3) 1-hr tests (Colorado Regulation No. 1, Sections II.A.1.b, c and d). In the absence of credible evidence to the contrary, compliance with the particulate matter limitation is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines and duct burners.

Note that the numeric PM standards for combined cycle operation were determined using the design heat input for the turbines (1,323 mmBtu/hr for Turbine 2 and 1,373 mmBtu/hr for Turbine 3) and duct burners (each 450 mmBtu) in the following equation:

PE (turbine + duct burner) = 
$$\underline{PE_T \times FI_T + PE_{DB} \times FI_{DB}}$$
  
 $FI_T + FI_{DB}$ 

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

Where  $PE = particulate \ standard \ in \ lbs/mmBtu$   $PE_{DB} = 0.5 \ x \ (FI)^{-0.26} \ lbs/mmBtu$   $PE_{T} = 0.1 \ lbs/mmBtu$   $FI = fuel \ input \ in \ mmBtu/hr$ 

1.6.3 Particulate Matter (PM) emissions **from each duct burner** shall not exceed 0.03 lbs/mmBtu, average of three (3) 2-hr tests (Colorado Construction Permit 94WE609 PSD). In the absence of credible evidence to the contrary, compliance with the particulate matter limitation is presumed since only pipeline quality natural gas is permitted to be used as fuel in the duct burners.

The PM emission limits are not applicable during times of startup, shutdown and malfunction (40 CFR Part 60 Subpart Da § 60.46Da(c), as adopted by reference in Colorado Regulation No. 6, Part A).

- 1.6.4 Particulate Matter (PM) emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 39.4 tons/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). Compliance with this limitation shall be monitored as follows:
  - 1.6.4.1 Monthly emissions of PM shall be calculated using the emission factors identified in the table below in the following equation:

	Emission Factor (lb/mmBtu)		Source of Emission Factor
Unit	PM	$PM_{10}$	
Unit 2 – Simple Cycle	0.004	0.004	April 28, 2010
Unit 2 – Combined Cycle	0.004	0.004	November 17 & 18, 2009
Unit 3 – Simple Cycle	0.003	0.003	October 28 and 29, 2009
Unit 3 – Combined Cycle	0.0017	0.0017	June 9, 2010

 $Tons/month = \underbrace{[EF (lbs/mmBtu) \ x \ monthly \ heat \ input \ to \ turbine \ (mmBtu/mo)]}_{2000 \ lbs/ton}$ 

The monthly heat input to the turbine/HRSG/duct burner shall be determined using the data acquisition and handling system (DAHS) for the CEMS required by Condition 1.10. A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 1.6.4.2 Performance testing shall be conducted in accordance with the requirements in Condition 1.12.
- 1.7 Particulate Matter less than 10 microns (PM<sub>10</sub>) emissions **from each combustion turbine/HRSG/duct burner** shall not exceed 9 lbs/hr and 39.4 tons/yr (Colorado Construction

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3). Compliance with these limitations shall be monitored as follows:

1.7.1 Monthly emissions of  $PM_{10}$  shall be calculated using the emission factors identified in the table in Condition 1.6.4.1 in the following equation:

Tons/month = [EF (lbs/mmBtu) x monthly heat input to turbine (mmBtu/mo)]2000 lbs/ton

The monthly heat input to the turbine/duct burner shall be determined using the data acquisition and handling systems (DAHS) for the CEMS required by Condition 1.10. A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitations. Each month a new twelve month total shall be calculated using the previous twelve months data. Compliance with the hourly limitation shall be monitored by dividing the monthly emissions by the number of hours operated each month.

- 1.7.2 Performance testing shall be conducted in accordance with the requirements in Condition 1.12.
- 1.8 Natural Gas Consumption **for each combustion turbine/HRSG/duct burner** shall not exceed the following limitations:
  - 1.8.1 When operating in either simple cycle mode or combined cycle mode without supplemental fuel natural gas consumption shall not exceed 12,507 mmSCF/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3).
  - 1.8.2 When operating in combined cycle mode with supplemental fuel natural gas consumption shall not exceed 16,090 mmSCF/yr (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3).

The natural gas consumption for each combustion turbine/duct burners shall be monitored using the data acquisition and handling systems (DAHS) for the continuous emission monitoring system (CEMS) required by Condition 1.10. Monthly natural gas consumption from each turbine/duct burner shall be used in rolling twelve month total to monitor compliance with the annual natural gas consumption limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

Note that if any time during the 12-month rolling period natural gas has been fired in the duct burners, the 16,090 mmSCF/yr natural gas consumption limit shall apply. The permitteee shall maintain records of the operating mode (simple cycle or combined cycle without fuel fired in the duct burners versus combined cycle with fuel fired in the duct burners) of each turbine/HRSG/duct burner.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 1.9 The permittee shall maintain records demonstrating that the natural gas burned has a total sulfur content less than 0.5 grains/100 SCF. Natural gas that meets this sulfur limitation is considered pipeline quality natural gas as defined in 40 CFR Part 72. The demonstration shall be made using any of the methods identified in 40 CFR Part 75 Appendix D, Section 2.3.1.4.(a). These records shall be made available to the Division upon request.
- 1.10 **For each combustion turbine/HRSG/duct burner**, continuous emission monitoring systems (CEMS) shall be installed, calibrated, maintained and operated (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3 and 40 CFR Part 75). The CEMS shall meet the following requirements:
  - 1.10.1 The Monitoring Requirements identified in Condition 5.1.
  - 1.10.2 The General Provisions identified in Condition 5.2.
  - 1.10.3 The Equipment and QA/QC Requirements identified in Condition 5.3.
  - 1.10.4 The Data Substitution Requirements identified in Condition 5.4.
  - 1.10.5 The Recordkeeping and Reporting Requirements identified in Condition 5.5.
- 1.11 These **combustion turbines/HRSGs/duct burners** are subject to 40 CFR Part 60, Subpart A General Provisions, as adopted by reference in Colorado Regulation No. 6, Part A. Specifically, these units are subject to the following requirements:
  - 1.11.1 No article, machine, equipment or process shall be used to conceal an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gasses discharged to the atmosphere (Colorado Construction Permit 94WE609 PSD and 40 CFR Part 60 Subpart A § 60.12)
  - 1.11.2 At all times, including periods of startup, shutdown, and malfunction owners and operators shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source (Colorado Construction Permit 94WE609 PSD and 40 CFR Subpart A § 60.11(d)).
- 1.12 The source shall conduct performance tests for each combustion turbine/HRSG/duct burner, when operating in simple cycle mode and combined cycle mode with supplemental fuel every five (5) years to monitor compliance with the PM and PM<sub>10</sub> emission limitations. This

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

performance test shall be conducted in accordance with the requirements of 40 CFR Part 60 Subpart A § 60.8 using EPA Test Methods 5 and 202.

Note that the previous performance tests for these units were completed as follows:

Unit	Performance Test Date
Unit 2 – Simple Cycle	April 28, 2010
Unit 2 – Combined Cycle	November 17 & 18, 2009
Unit 3 – Simple Cycle	October 28 and 29, 2009
Unit 3 – Combined Cycle	June 9, 2010

A stack testing protocol shall be submitted for Division approval at least thirty (30) calendar days prior to any performance of the test required under this condition. No stack test required herein shall be performed without prior written approval of the protocol by the Division. The Division reserves the right to witness the test. In order to facilitate the Division's ability to make plans to witness the test, notice of the date (s) for the stack test shall be submitted to the Division at least thirty (30) calendar days prior to the test. The Division may for good cause shown, waive this thirty (30) day notice requirement. In instances when a scheduling conflict is presented, the Division shall immediately contact the permittee in order to explore the possibility of making modifications to the stack test schedule. The required number of copies of the compliance test results shall be submitted to the Division within forty-five (45) calendar days of the completion of the test unless a longer period is approved by the Division.

- 1.13 **State-only Requirement:** No owner or operator may discharge, or cause the discharge into the atmosphere of any particulate matter which is greater than 20% opacity (Colorado Regulation No. 6, Part B, Section II.C.3). This opacity standard applies to **each combustion turbine/HRSG/duct burner**. In the absence of credible evidence to the contrary, compliance with the opacity limitation shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines and duct burners.
- 1.14 Except as provided for in Condition 1.15 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 94WE609 PSD and Colorado Regulation No. 1, Section II.A.1). This opacity standard applies to **each combustion turbine/HRSG/duct burner**. In the absence of credible evidence to the contrary, compliance with the opacity limitation shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines and duct burners.
- 1.15 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4). This opacity standard applies to **each combustion turbine/HRSG/duct burner**. In the absence of credible evidence

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

to the contrary, compliance with the opacity limitation shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines and duct burners.

1.16 No owner or operator of a source shall cause to be discharged into the atmosphere from any affected facility any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity ((40 CFR Part 60 Subpart Da § 60.42Da(b), as adopted by reference in Colorado Regulation No. 6, Part A). This opacity standard applies to **each duct burner.** In the absence of credible evidence to the contrary, compliance with the opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel for these units.

This opacity standard applies at all times except during periods of startup, shutdown and malfunction (40 CFR Part 60 Subpart A § 60.11(c), as adopted by reference in Colorado Regulation No. 6, Part A).

1.17 These units are subject to the Title IV Acid Rain Requirements. As specified in 40 CFR Part 72.72(b)(1)(viii), the acid rain permit requirements shall be a complete and segregable portion of the Operating Permit. As such the requirements are found in Section III of this permit.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

# 2. T004 – Combustion Turbine Capable of Simple or Combined Cycle Operation

**Simple Cycle - Combustion Turbine Only** 

 $Combined\ Cycle\ (No\ Supplemental\ Fuel)\ -\ Combustion\ Turbine\ \&\ Heat\ Recovery\ Steam\ Generator\ (HRSG)\ with\ No\ Fuel\ Fired\ in\ Duct\ Burner$ 

Combined Cycle (With Supplemental Fuel) –Combustion Turbine & Heat Recovery Steam Generator (HRSG) with Fuel Fired in Duct Burner

Parameter Permit Condition Number		Limitations		Compliance Emission Factor	Monitoring	
	Short Term	Long Term	Method		Interval	
BACT Requirements	2.1	N/A N/A See Condition		tion 2.1.		
PM	2.2.	N/A	54 tons/yr	0.005 lbs/mmBtu	Recordkeeping and Calculation	Monthly
		Combustion Turbine: 0.1 lbs/mmBtu, the average of three (3), 1-hr tests		N/A	Quali Gas i	Only Pipeline Quality Natural Gas is Used as Fuel
		Combustion Turbine and Duct Burner Together: 0.1 lbs/mmBtu, the average of three (3), 1-hr tests				r uei
		Duct Burner: 0.03 lbs/mmBtu, the average of three (3), 2-hr tests				
$PM_{10}$		N/A	54 tons/yr	0.005 lbs/mmBtu	Recordkeeping and Calculation	Monthly
VOC	2.3.	N/A	33.1 tons/yr	N/A	Continuous Monitoring System	Continuously

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

Parameter	Permit Condition	Limitations		Compliance Emission	Monitoring	
Numb	Number	Short Term	Long Term	Factor	Method	Interval
SO <sub>2</sub>	2.4.	N/A	4.7 tons/yr	N/A	Continuous Monitoring System	Continuously
		Combustion Turbine: 150 ppmvd @ 15% O <sub>2</sub> OR Use of Fuel Which Contains Less than 0.8 Weight % Sulfur  Combustion Turbine: 0.35 lbs/mmBtu, on a 3-hour rolling average		N/A	Fuel Restriction	See Condition 2.4.
		Duct Burner: 0.20 lbs/mmBtu on a 30-day rolling average				
NO <sub>X</sub>	2.5.	-		N/A	Continuous Emission Monitoring System	Continuously

Parameter	Permit Condition Number	Limitations		Compliance Emission	Monitoring	
		Short Term	Long Term	Factor	Method	Interval
СО	2.6.	Simple Cycle Mode or Combined Cycle Mode – No Supplemental Fuel:  9 ppmvd @ 15% O <sub>2</sub> on a 1-hr average, except as provided for below  During Startup and Shutdown: 1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  During Combustion Tuning and Testing (not to exceed 90 hrs/yr per for all three turbines combined): 1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  Combined Cycle Mode – With Supplemental Fuel: 20 ppmvd @ 15% O <sub>2</sub> on a 1-hr average, except as provided for below  During Startup and Shutdown: 1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr  During Combustion Tuning and Testing (not to exceed 90 hrs/yr per for all three turbines combined): 1000 ppmvd @ 15% O <sub>2</sub> on a 1-hr average and 2,060 lbs/hr		N/A	Continuous Emission Monitoring System	Continuously
		N/A	237.9 tons/yr			
Heat Input from Natural Gas	2.7.	N/A	Combustion Turbine: 12,066,462 mmBtu/yr Duct Burner: 3,157,702 mmBtu/yr	N/A	Recordkeeping	Monthly
Continuous Emission Monitoring System Requirements	2.8.	N/A	N/A	N/A	See Condition 2.8.	

Parameter	Permit Condition	Limitations		Compliance Emission	Monitoring	
	Number	Short Term	Long Term	Factor	Method	Interval
Compliance Assurance Monitoring Requirements – For Combined Cycle Operation	2.9.	N/A	N/A	N/A	See Cond	lition 2.9.
Sulfur Content of Natural Gas	2.10.	N/A	N/A	N/A	See Condition 2.10.	
NSPS General Provisions	2.11.	N/A	N/A	N/A	As required by NSPS General Provisions	Subject to NSPS General Provisions
Opacity	2.12.	Not to Exceed 20% Except as Provided for in 2.13		N/A	Fuel Restriction	Only Pipeline Quality Natural Gas is Used as Fuel
Opacity	2.13.	For Certain Operational Activities - Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes		N/A		
State-Only Opacity	2.14.	Not to Exceed 20%		N/A		
NSPS Opacity – Applies to Duct Burner Only	2.15.	Not to Exceed 20% (6-minute average), Except for One Six Minute Average Not to Exceed 27% Per Hour		N/A	·	
Acid Rain Requirements	2.16.	See Section III of this Permit		Certification	Annually	

- 2.1 The **combustion turbine/HRSG/duct burner** is subject to the requirements of the Prevention of Significant Deterioration (PSD) Program.
  - 2.1.1 Best Available Control Technology (BACT) shall be applied for control of Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO) and Particulate Matter Emissions (PM and PM<sub>10</sub>). BACT has been determined as follows:
    - 2.1.1.1 BACT for  $NO_X$  has been determined to be Dry Low  $NO_X$  combustion system for the turbine and Selective Catalytic Reduction (SCR) for the HRSG with the emission limits as identified in Condition 2.5.1 (Colorado Construction Permit 99WE0762 PSD).

- 2.1.1.2 BACT for CO has been determined to be good combustion practices/monitoring systems capable of meeting the emission limits identified in Condition 2.6.1 (Colorado Construction Permit 99WE0762 PSD).
- 2.1.1.3 BACT for PM and PM<sub>10</sub> has been determined to be use of pipeline quality natural gas (Colorado Construction Permit 99WE0762 PSD).
- 2.2 PM and  $PM_{10}$  emissions are subject to the following requirements:
  - 2.2.1 Emissions of PM and PM<sub>10</sub> from the combustion turbine /HRSG/duct burner shall not exceed 54 tons/yr (Colorado Construction Permit 99WE0762 PSD). Monthly emissions from the combustion turbine/HRSG/duct burner shall be calculated by the end of the subsequent month using the emission factors (EF) identified in the above table (from performance test conducted May 10-12, 2001) in the following equation:

 $tons/month = \underbrace{(EF, lbs/mmBtu) \ x \ (Fuel \ Use, \ mmSCF/mo) \ x \ heat \ content \ of \ gas \ (mmBtu/mmSCF)}_{2000 \ lbs/ton}$ 

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.2.2 Particulate Matter (PM) emissions **from the combustion turbine** shall not exceed 0.1 lbs/mmBtu, the average of three (3) 1-hr tests (Colorado Regulation No. 1, Section III.A.1.c). In the absence of credible evidence to the contrary, compliance with the particulate matter emission limitation is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine.
- 2.2.3 Particulate Matter (PM) emissions **from the combustion turbine and duct burner together** shall not exceed 0.1 lbs/mmBtu, the average of three (3) 1-hr tests (Colorado Regulation No. 1, Sections III.A.1.b,c and d). In the absence of credible evidence to the contrary, compliance with the particulate matter emission limitation is presumed since only pipeline quality natural gas is permitted by be used as fuel in the turbine and duct burner.

Note that the numeric PM standards for combined cycle operation were determined using the design heat input for the turbine (1,531 mmBtu/hr) and the duct burner (each 422 mmBtu) in the following equation:

PE (turbine + duct burner) = 
$$\underline{PE_T} \times \underline{FI_T} + \underline{PE_{DB}} \times \underline{FI_{DB}}$$
  
 $FI_T + FI_{DB}$ 

Where PE = particulate standard in lbs/mmBtu

 $PE_{DB} = 0.5 \text{ x (FI)}^{-0.26} \text{ lbs/mmBtu}$ 

 $PE_T = 0.1 lbs/mmBtu$ 

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

# FI = fuel input in mmBtu/hr

2.2.4 Particulate Matter (PM) emissions **from the duct burner** shall not exceed 0.03 lbs/mmBtu, the average of three (3) 2-hr tests (Colorado Construction Permit 99MR0762 PSD). In the absence of credible evidence to the contrary, compliance with the particulate matter limitations shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the duct burner.

The PM emission limits are not applicable during times of startup, shutdown and malfunction (40 CFR Part 60 Subpart Da § 60.46Da(c), as adopted by reference in Colorado Regulation No. 6, Part A).

2.3 Volatile Organic Compound emissions **from the combustion turbine/HRSG/duct burner** shall not exceed 33.1 tons/yr (Colorado Construction Permit 99WE0762 PSD). Compliance with the VOC limitations shall be monitored using the VOC correlation (VOC emissions vs. heat input) that has been approved by the Division and programmed into the data acquisition and handling system (DAHS). The VOC correlation was approved by the Division on February 6, 2002, with written approval provided in the Division's letter dated March 26, 2008 to the permittee. The equations used in the VOC correlation are included in Appendix G of this permit.

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.4 Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed the following limitations:
  - 2.4.1 Sulfur Dioxide (SO<sub>2</sub>) emissions **from the combustion turbine/HRSG/duct burner** shall not exceed 4.7 tons/yr (Colorado Construction Permit 99WE0762 PSD, as modified under the provisions of Section I, Condition 1.3, based on the requested SO<sub>2</sub> limits identified on the APEN received on February 27, 2002). Compliance with the annual SO<sub>2</sub> emission limitations shall be monitored using the monitoring method specified in 40 CFR Part 75 Appendix D.

A twelve month rolling total of emissions shall be maintained to monitor compliance with the annual emission limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.4.2 The **combustion turbine** shall meet one of the following requirements:
  - 2.4.2.1 Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 150 ppmvd at 15%  $O_2$   $\mathbf{OR}$
  - 2.4.2.2 No fuel, which contains sulfur in excess of 0.8 percent by weight, shall be used in this combustion turbine (40 CFR Part 60 Subpart GG §§ 60.33(a) & (b), as adopted by reference in Colorado Regulation No. 6, Part A).

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

In the absence of credible evidence to the contrary, compliance with the above requirements is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine. The natural gas used as fuel shall meet the requirements in Condition 2.10.

- 2.4.3 Sulfur Dioxide (SO<sub>2</sub>) emissions **from the combustion turbine** shall not exceed 0.35 lbs/mmBtu, on a 3-hr rolling average (Colorado Regulation No. 1, Section VI.B.4.c.(ii) and VI.B.2). In the absence of credible evidence to the contrary, compliance with the SO<sub>2</sub> limitations is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine.
- 2.4.4 Sulfur Dioxide (SO<sub>2</sub>) emissions **from the duct burner** shall not exceed 0.20 lbs/mmBtu, on a 30-day rolling average (Colorado Construction Permit 99WE0762 PSD). In the absence of credible evidence to the contrary, compliance with the SO<sub>2</sub> limitations is presumed since only pipeline quality natural gas is permitted to be used as fuel in the duct burner.
- 2.5 Emissions of Nitrogen Oxides (NO<sub>X</sub>) shall not exceed the following limitations:
  - 2.5.1 The BACT emission limits **for the combustion turbine/HRSG/duct burner** are as follows (Colorado Construction Permit 99WE0762 PSD, as modified under the provisions of Section I, Condition 1.3):
    - 2.5.1.1 Except as provided for in Conditions 2.5.1.3 and 2.5.1.4 below, emissions of  $NO_X$  shall not exceed 9 ppmvd at 15 %  $O_2$ , on a 24-hour average. **This standard applies when operating in simple cycle mode.**
    - 2.5.1.2 Except as provided for in Conditions 2.5.1.3 and 2.5.1.4 below, emissions of  $NO_X$  shall not exceed 4 ppmvd at 15 %  $O_2$ , on a 24-hour average. **This standard applies when operating in combined cycle mode.**
    - 2.5.1.3 During periods of startup and shutdown emissions of  $NO_X$  shall not exceed 100 ppmvd at 15%  $O_2$ , on a 1-hr average.
    - 2.5.1.4 During periods of combustion tuning and testing emissions of NO<sub>X</sub> shall not exceed 100 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. Use of this NO<sub>X</sub> emission limit for purposes of combustion tuning and testing shall not exceed 90 hours in any calendar year **for all three turbines combined**. Records of the number of hours the turbine undergoes combustion tuning and testing shall be recorded and maintained and made available to the Division upon request.
    - 2.5.1.5 "Startup" shall have the same definition as provided for in Condition 1.2.1.5.
    - 2.5.1.6 "Shutdown" shall have the same definition as provided for in Condition 1.2.1.6.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

2.5.1.7 "Combustion Tuning and Testing" shall have the same definition as provided for in Condition 1.2.1.7.

Compliance with these  $NO_X$  limitations shall be monitored using the continuous emission monitoring system (CEMS) required by Condition 2.8, as follows:

- 2.5.1.8 Except as provided for in Condition 2.5.1.9, all valid CEMS concentration (ppm) data points, excluding startup and shutdown data points shall, at the end of each clock hour be summarized to generate the average NO<sub>X</sub> concentration. Compliance with the limitations in Conditions 2.5.1.1 and 2.5.1.2 shall be based on a 24-hour rolling average, except that compliance with the limitations cannot be assessed until 24 hours of operation have occurred. It is not necessary for hours of operation to be consecutive (i.e. the rolling 24-hour average would resume after the unit has shutdown and is re-started and/or between switches in operating mode (simple cycle to combined cycle)) in order for those hours to be included in the 24-hour rolling averages.
- 2.5.1.9 All valid CEMS concentration (ppm) data points, excluding non-startup and non-shutdown data points shall, at the end of each clock hour be summarized to generate the average  $NO_X$  concentration. Each clock hour average  $NO_X$  concentration shall be compared to the limitation in Condition 2.5.1.3.

In the event that a startup ends within a clock hour or shutdown begins within a clock hour, all non-startup and/or non-shutdown concentration (ppm) data points within that clock hour shall be averaged together to generate the average  $NO_X$  concentration and that average concentration shall be included in the 24-hour rolling averages to monitor compliance with the limitations in either Conditions 2.5.1.1 or 2.5.1.2 or compared to the limitation in Condition 2.5.1.4, as appropriate.

2.5.1.10 Within 60 days after renewal permit issuance [January 1, 2011], the data acquisition and handling system (DAHS) shall be programmed to address the revised compliance calculations set forth in Conditions 2.5.1.8 and 2.5.1.9 for the emission limits in Conditions 2.5.1.1 through 2.5.1.4. Prior to re-programming the DAHS, all valid CEMS concentration data points shall, at the end of each hour, be summarized to generate the average NO<sub>X</sub> concentration. The emission limits in Conditions 2.5.1.1, 2.5.1.2 and 2.5.1.4 apply to any clock hour of operation that does not include any data from a startup or shutdown. Compliance with the limitations in Conditions 2.5.1.1 and 2.5.1.2 shall be based on a 24-hour rolling average, except that compliance with the limitations cannot be assessed until 24 hours of operation have occurred. It is not necessary for hours of operation to be consecutive (i.e. the rolling 24-hour average would resume after the unit has shutdown and is re-started and/or between switches in

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- operating mode (simple cycle to combined cycle)) in order for those hours to be included in the 24-hour rolling averages.
- 2.5.1.11 The emission limitation in Condition 2.5.1.4 applies to any clock hour in which combustion tuning and testing activities occur.
- 2.5.2 Nitrogen Oxides (NO<sub>X</sub>) emissions **from the combustion turbine/HRSG/duct burner** shall not exceed 199.1 tons/yr (Colorado Construction Permit 99WE0762 PSD). Compliance with the annual limitation shall be monitored using the CEMS required by Condition 2.8.

A twelve month rolling total of emissions shall be maintained to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months total.

- 2.6 Emissions of Carbon Monoxide (CO) shall not exceed the following limitations:
  - 2.6.1 The BACT CO emission limits **for the combustion turbine/HRSG/duct burner** are as follows (Colorado Construction Permit 99WE0762, as modified under the provisions of Section I, Condition 1.3):
    - 2.6.1.1 Except as provided for in Conditions 2.6.1.3 and 2.6.1.4 below, emissions of CO shall not exceed 9 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in either simple cycle mode or combined cycle mode without supplemental fuel.**
    - 2.6.1.2 Except as provided for in Conditions 2.6.1.3 and 2.6.1.4 below, emissions of CO shall not exceed 20 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. **This standard applies when operating in combined cycle mode with supplemental fuel.**
    - 2.6.1.3 During periods of startup and shutdown emissions of CO shall not exceed 1,000 ppmvd at 15% O<sub>2</sub>, on a 1-hr average and 2,060 lbs/hr. In the event that CO emissions exceed 1,000 ppmvd at 15% O<sub>2</sub>, it shall be considered a violation if CO emissions exceed 2,060 lbs/hr and not a violation if emissions are less than or equal to 2,060 lbs/hr.
    - 2.6.1.4 During periods of combustion tuning and testing emissions of CO shall not exceed 1,000 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. In the event that CO emissions exceed 1,000 ppmvd at 15% O<sub>2</sub>, it shall be considered a violation if CO emissions exceed 2,060 lbs/hr and not a violation if emissions are less than or equal to 2,060 lbs/hr. Use of this CO emission limit for purposes of combustion tuning and testing shall not exceed 90 hours in any calendar year **for all three turbines combined**. Records of the number of hours the turbine undergoes combustion tuning and testing shall be recorded and maintained and made available to the Division upon request.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 2.6.1.5 "Startup" shall have the same definition as provided for in Condition 1.2.1.5.
- 2.6.1.6 "Shutdown" shall have the same definition as provided for in Condition 1.2.1.6.
- 2.6.1.7 "Combustion Tuning and Testing" shall have the same definition as provided for in Condition 1.2.1.7.

Compliance with these CO limitations shall be monitored using the continuous emission monitoring system (CEMS) required by Condition 2.8, as follows:

- 2.6.1.8 Except as provided for in Condition 2.6.1.9, all valid CEMS concentration (ppm) data points, excluding startup and shutdown data points shall, at the end of each clock hour be summarized to generate the average CO concentration. Each clock hour average CO concentration shall be compared to the limitations in Conditions 2.6.1.1, 2.6.1.2 or 2.6.1.4, as appropriate.
- 2.6.1.9 All valid CEMS concentration (ppm) data points, excluding non-startup and non-shutdown data points shall, at the end of each clock hour be summarized to generate the average CO concentration. Each clock hour average CO concentration shall be compared to the limitation in Condition 2.6.1.3.

In the event that a startup ends within a clock hour or shutdown begins within a clock hour, all non-startup and/or non-shutdown concentration (ppm) data points within that clock hour shall be averaged together to generate the average CO concentration and that average concentration shall be compared to the limitations in Conditions 2.6.1.1, 2.6.1.2 or 2.6.1.4, as appropriate.

- 2.6.1.10 Within 60 days after renewal permit issuance [January 1, 2011], the data acquisition and handling system (DAHS) shall be programmed to address the revised compliance calculations set forth in Conditions 2.6.1.8 and 2.6.1.9 for the emission limits in Conditions 2.6.1.1 through 2.6.1.4. Prior to re-programming the DAHS, all valid CEMS concentration data points shall, at the end of each hour, be summarized to generate the average CO concentration. The emission limits in Conditions 2.6.1.1, 2.6.1.2 and 2.6.1.4 apply to any clock hour of operation that does not include any data from a startup or shutdown.
- 2.6.1.11 The emission limitation in Condition 2.6.1.4 applies to any clock hour in which combustion tuning and testing activities occur.
- 2.6.2 Carbon Monoxide (CO) emissions **from the combustion turbine/HRSG/duct burner** shall not exceed 237.9 tons/yr (Colorado Construction Permit 99WE0762

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

PSD). Compliance with the annual limitation shall be monitored using the CEMS required by Condition 2.8.

Monthly emissions shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.7 The Heat Input from Natural Gas **to the combustion turbine and duct burner** shall not exceed the following limitations:
  - 2.7.1 The heat input to **the combustion turbine** shall not exceed 12,066,462 mmBtu/yr (Colorado Construction Permit 99WE0762 PSD, as modified under the provisions of Section I, Condition 1.3, based on the requested turbine gas consumption limits identified on the APEN received on February 27, 2002).
  - 2.7.2 The heat input to **the duct burner** shall not exceed 3,157,702 mmBty/yr (Colorado Construction Permit 99WE0762 PSD).

The heat input for the combustion turbine and the duct burner shall be monitored using the data acquisition and handling systems (DAHS) for the continuous emission monitoring system (CEMS) required by Condition 2.8.

Monthly heat input shall be used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 2.8 Continuous emission monitoring systems (CEMS) shall be installed, calibrated, maintained and operated **on the combustion turbine/HRSG** (Colorado Construction Permit 99WE762 PSD, as modified under the provisions of Section I, Condition 1.3 and 40 CFR Part 75). The continuous emission monitoring systems shall meet the following requirements:
  - 2.8.1 The Monitoring Requirements identified in Condition 5.1.
  - 2.8.2 The General Provisions identified in Condition 5.2.
  - 2.8.3 The Equipment and QA/QC Requirements identified in Condition 5.3.
  - 2.8.4 The Data Substitution Requirements identified in Condition 5.4.
  - 2.8.5 The Recordkeeping and Reporting Requirements identified in Condition 5.5.
- 2.9 The Compliance Assurance Monitoring (CAM) requirements in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV, apply to **when operating in combined cycle mode**, with respect to the NO<sub>X</sub> limitations identified in Conditions 2.5.1.2 as follows:

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

2.9.1 The permittee shall monitor the exhaust gas NO<sub>X</sub> concentration (ppmvd at 15% O<sub>2</sub>) using the continuous emission monitoring system required by Condition 2.8. The NO<sub>X</sub> concentrations will be reduced to hourly averages and used to calculate 24-hour averages. Exceedances, for purposes of CAM, shall be any 24-hour period that the NO<sub>X</sub> concentration exceeds the limit identified in Condition 2.5.1.2. Exceedances of these limitations shall be reported as required by Section II, Condition 5.5 and Section V, Conditions 21 and 22.d of this permit.

### 2.9.2 Operation of Approved Monitoring

- 2.9.2.1 At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment (40 CFR Part 64 § 64.7(b), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.2.2 Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of these CAM requirements, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions (40 CFR Part 64 § 64.7(c), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

### 2.9.2.3 Response to excursions or exceedances

a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable (40 CFR Part 64 § 64.7(d)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- b. Determination of whether the owner of operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process (40 CFR Part 64 § 64.7(d)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.2.4 After approval of the monitoring required under the CAM requirements, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the Division and, if necessary submit a proposed modification for this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters (40 CFR Part 64 § 64.7(e), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.3 Quality Improvement Plan (QIP) Requirements
  - 2.9.3.1 Based on the results of a determination made under the provisions of Condition 2.9.2.3.b, the Division may require the owner or operator to develop and implement a QIP (40 CFR Part 64 § 64.8(a), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
  - 2.9.3.2 The owner or operator shall maintain a written QIP, if required, and have it available for inspection (40 CFR Part 64 § 64.8(b)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
  - 2.9.3.3 The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- a. Improved preventative maintenance practices (40 CFR Part 64 § 64.8(b)(2)(i), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- b. Process operation changes (40 CFR Part 64 § 64.8(b)(2)(ii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- c. Appropriate improvements to control methods (40 CFR Part 64 § 64.8(b)(2)(iii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- d. Other steps appropriate to correct control performance (40 CFR Part 64 § 64.8(b)(2)(iv), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- e. More frequent or improved monitoring (only in conjunction with one or more steps under Conditions 2.9.3.3.a through d above) (40 CFR Part 64 § 64.8(b)(2)(v), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.3.4 If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the Division if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined (40 CFR Part 64 § 64.8(c), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.3.5 Following implementation of a QIP, upon any subsequent determination pursuant to Condition 2.9.2.3.b, the Division or the U.S. EPA may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:
  - a. Failed to address the cause of the control device performance problems (40 CFR Part 64 § 64.8(d)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV); or
  - b. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions (40 CFR Part 64 § 64.8(d)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.3.6 Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the federal clean air act (40 CFR Part 64 § 64.8(e), as adopted by reference in Colorado Regulation No. 3, Part C,

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Section XIV).

- 2.9.4 Reporting and Recordkeeping Requirements
  - 2.9.4.1 <u>Reporting Requirements:</u> The reports required by Section V, Condition 22.d, shall contain the information specified in Appendix B of the permit and the following information, as applicable:
    - a. Summary information on the number, duration and cause (including unknown cause, if applicable), for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable) ((40 CFR Part 64 § 64.9(a)(2)(ii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV); and
    - b. The owner or operator shall submit, if necessary, a description of the actions taken to implement a QIP during the reporting period as specified in Condition 2.9.3 of this permit. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring (40 CFR Part 64 § 64.9(a)(2)(iii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
  - 2.9.4.2 <u>General Recordkeeping Requirements</u>: In addition to the recordkeeping requirements in Section V, Condition 22.a through c.
    - a. The owner or operator shall maintain records of any written QIP required pursuant to Condition 2.9.3 and any activities undertaken to implement a QIP, and any supporting information required to be maintained under these CAM requirements (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions) (40 CFR Part 64 § 64.9(b)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
    - b. Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements (40 CFR Part 64 § 64.9(b)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.5 Savings Provisions
  - 2.9.5.1 Nothing in these CAM requirements shall excuse the owner or operator of

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the federal clean air act. These CAM requirements shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purposes of determining the monitoring to be imposed under separate authority under the federal clean air act, including monitoring in permits issued pursuant to title I of the federal clean air act. The purpose of the CAM requirements is to require, as part of the issuance of this Title V operating permit, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of CAM (40 CFR Part 64 § 64.10(a)(1), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).

- 2.9.5.2 Nothing in these CAM requirements shall restrict or abrogate the authority of the U.S. EPA or the Division to impose additional or more stringent monitoring, recordkeeping, testing or reporting requirements on any owner or operator of a source under any provision of the federal clean air act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable (40 CFR Part 64 § 64.10(a)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.9.5.3 Nothing in these CAM requirements shall restrict or abrogate the authority of the U.S. EPA or the Division to take any enforcement action under the federal clean air act for any violation of an applicable requirement or of any person to take action under section 304 of the federal clean air act (40 CFR Part 64 § 64.10(a)(2), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV).
- 2.10 The permittee shall maintain records demonstrating that the natural gas burned has a total sulfur content less than 0.5 grains/100 SCF. Natural gas that meets this sulfur limitation is considered pipeline quality natural gas as defined in 40 CFR Part 72. The demonstration shall be made using any of the methods identified in 40 CFR Part 75 Appendix D, Section 2.3.1.4.(a). These records shall be made available to the Division upon request.
- 2.11 These **combustion turbine/HRSG/duct burner** is subject to 40 CFR Part 60, Subpart A General Provisions, as adopted by reference in Colorado Regulation No. 6, Part A. Specifically, these units are subject to the following requirements:
  - 2.11.1 No article, machine, equipment or process shall be used to conceal an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

pollutant in the gasses discharged to the atmosphere. (40 CFR Part 60 Subpart A § 60.12, as adopted in Colorado Regulation No. 6, Part A)

- At all times, including periods of startup, shutdown, and malfunction, owners and operators shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source (40 CFR Subpart A § 60.11(d), as adopted by reference in Colorado Regulation N. 6, Part A).
- 2.12 Except as provided for in Condition 2.13 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 99WE0762 PSD and Colorado Regulation No. 1, Section II.A.1). This opacity standard applies to **the combustion turbine/HRSG/duct burner**. In the absence of credible evidence to the contrary, compliance with the 20% opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine and duct burner.
- 2.13 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Construction Permit 99WE0762 PSD and Colorado Regulation No. 1, Section II.A.4). This opacity standard applies to **the combustion turbine/HRSG/duct burner.** In the absence of credible evidence to the contrary, compliance with the 30% opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine and duct burner.
- 2.14 **State-Only Requirement:** No owner or operator may discharge, or cause the discharge into the atmosphere of any particulate matter which is greater than 20% opacity (Colorado Regulation No. 6, Part B, Section II.C.3). This opacity standard applies to **the combustion turbine/HRSG/duct burner.** In the absence of credible evidence to the contrary, compliance with the 20% opacity requirement is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbine and duct burner.
  - This opacity standard applies at all times except during periods of startup, shutdown and malfunction (40 CFR Part 60 Subpart A § 60.11(c), as adopted by reference in Colorado Regulation No. 6, Part B, Section I.A).
- 2.15 No owner or operator of a source shall cause to be discharged into the atmosphere from any affected facility any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity ((40 CFR Part 60 Subpart Da § 60.42Da(b), as adopted by reference in Colorado Regulation No. 6, Part A and

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Colorado Construction Permit 99WE0762 PSD). This opacity standard applies to **the duct burner.** In the absence of credible evidence to the contrary, compliance with the opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel for the duct burner.

This opacity standard applies at all times except during periods of startup, shutdown and malfunction (40 CFR Part 60 Subpart A § 60.11(c), as adopted by reference in Colorado Regulation No. 6, Part A).

2.16 This unit is subject to the Title IV Acid Rain Requirements. As specified in 40 CFR Part 72.72(b)(1)(viii), the acid rain permit requirements shall be complete and segregable portion of the Operating Permit. As such the requirements are found in Section III of this permit.

### 3. B001 - Auxiliary Boiler

Parameter	Permit	Limita	ations	Compliance	Monitor	ring
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
$NO_X$	3.1	N/A	32.6 tons/yr	100 lbs/mmSCF	Recordkeeping	Monthly
СО		N/A	27.4 tons/yr	84 lbs/mmSCF	and Calculation	
Natural Gas Usage	3.2	N/A	651.7 mmSCF/yr	N/A	Fuel Meter and Recordkeeping	Monthly
Particulate Matter (PM)	3.3.	0.166 lbs/mmBtu		N/A	Fuel Restriction	Only Natural Gas is Used as Fuel
Opacity	3.4.	Not to 20% Except as Provided for in 3.5 Below		N/A	Fuel Restriction	Only Natural Gas is Used as Fuel
Opacity	3.5.	Special Conditions - Not to Exceed 30% for a Period or Periods Aggregating More than Six (6) Minutes in Any Sixty Consecutive Minutes		N/A	Fuel Restriction	Only Natural Gas is Used as Fuel

3.1 Emissions of Nitrogen Oxides (NO<sub>X</sub>) and Carbon Monoxide (CO) shall not exceed the above limitations (as provided for under the provisions of Section I, condition 1.3, with as requested on the APEN submitted 4/23/99). Monthly emissions shall be calculated by the end of the subsequent month using the above emission factors (EPA's Compilation of Emission Factors, dated March 1998, Section 1.4) in the following equation:

 $tons/month = [\underline{EF (lbs/mmSCF) x monthly fuel usage (mmSCF/month)}]$   $2000 \ lbs/ton$ 

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

A twelve month rolling total of emissions will be maintained to monitor compliance with the annual emission limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 3.2 Natural Gas Usage for this boiler shall not exceed the limitation stated above (as provided for under the provisions of Section I, condition 1.3, with natural gas consumption as requested in the source's comments on the draft permit submitted 5/25/99). On the first working day of each month natural gas usage shall be recorded using the boiler fuel meter. Monthly natural gas use shall be used in a twelve month rolling total to monitor compliance with annual limitations. Each month a new twelve month total shall be calculated using the previous months data.
- 3.3 Particulate Matter (PM) emissions shall not exceed the limitation above (Colorado Regulation No. 1, Section II.A.1.b). In the absence of credible evidence to the contrary, compliance with the particulate matter limitations is presumed since only natural gas is permitted to be used as fuel in the boiler.

Note that the numeric PM standard was determined using the design heat input for the boiler (70 mmBtu/hr) in the following equation:

 $PE = 0.5 \text{ x (FI)}^{-0.26}$ , where: PE = particulate standard in lbs/mmBtu

FI = fuel input in mmBtu/hr

- 3.4 Except as provided for in Condition 3.5 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Regulation No. 1, Section II.A.1). In the absence of credible evidence to the contrary, compliance with the opacity limitation is presumed since only natural gas is permitted to be used as fuel in the boiler.
- 3.5 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4). In the absence of credible evidence to the contrary, compliance with the opacity limitation is presumed since only natural gas is permitted to be used as fuel in the boiler.

## 4. M001 - Cooling Water and Service Water Towers

Parameter	Permit	Limit	ations	Compliance	Monitoring	
	Condition Short Term Long Term Emission Factor Number	Method	Interval			
PM	4.1	N/A	14.9 tons/yr	See Condition 4.1	Recordkeeping	Monthly
$PM_{10}$		N/A	14.9 tons/yr		and Calculation	
VOC		N/A	2.4 tons/yr	0.0527 lbs/mmgal (as CHCl <sub>3</sub> )		
Water Circulated	4.2	N/A	89,878 mmgal/yr	N/A	Recordkeeping	Monthly
Total Solids Concentration	4.3	N/A	N/A	N/A	Laboratory Analysis	Semi- Annually
Opacity	4.4	Not to Exceed 20%		N/A	See Condit	ion 4.4.

4.1 Particulate Matter (PM and PM<sub>10</sub>) and Volatile Organic Compound (VOC) emissions shall not exceed the limitations above (Colorado Construction Permit 97WE0189, as modified under the provisions of Section I, Condition 1.3). Emissions shall be calculated monthly for each tower using the following equations:

$$PM = PM_{10} \text{ (tons/month)} = \underbrace{Q \text{ x d x \% drift x 31.3\% drift dispersed x total solids}}_{2000 \text{ lbs/ton}}$$

Where: Q = water circulated, gal/month

d = density of water, lbs/gal (from T5 application d = 8.34 lbs/gal)

% drift = 0.001% (from T5 application)

31.3% drift dispersed (from EPA-600/7-79-251a, November 1979, AEffects of Pathogenic and Toxic Materials Transported Via Cooling Device Drift - Volume1 - Technical Report@, Page 63) Total solids = in ppm (lbs solids/10<sup>6</sup> lbs water) - to be determined by Condition 4.3. The most recent analysis shall be used in the monthly calculation.

VOC = CHCl<sub>3</sub> (tons/month) = 
$$\underline{Q} \times \underline{EF} \times (1 \text{ mmgal/}10^6 \text{ gal})$$
  
2000 lbs/ton

Where: Q = water circulated, gal/month

EF = 0.0527 lbs/mmgal (from letter from Wayne C. Micheletti to Ed Lasnic, dated November 11,

1992)

Monthly emissions from each tower shall be summed together and used in a twelve month rolling total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

4.2 The Water Circulated through **both** the service water tower **and** the cooling water tower shall not exceed the limitation above (Colorado Construction Permit 97WE0189, as modified under the provisions of Section I, Condition 1.3). The quantity of water circulated in each tower shall be monitored and recorded monthly. Monthly quantities of water from each tower shall be

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

summed together and used in a twelve month rolling total to monitor compliance with the annual limitation. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 4.3 Samples of water circulated from each tower shall be taken and analyzed semi-annually to determine the total solids concentration. The total solids concentration shall be used to calculate particulate matter emissions as required by Condition 4.1. A copy of the procedures used to obtain and to analyze samples shall be maintained and made available to the Division upon request.
- 4.4 Opacity of emissions from the cooling water tower shall not exceed 20% (Colorado Regulation No. 1, Section II.A.1). In the absence of credible evidence to the contrary, compliance with the opacity standard shall be presumed, provided the drift eliminators on the tower are operated and maintained in accordance with the manufacturers' recommendations and good engineering practices.

### 5. Continuous Emission Monitoring Systems (CEMS)

### **5.1** Monitoring Requirements

For each turbine, a continuous emission monitoring system shall be installed, calibrated, and operated on the exhaust stack to determine and record the following (Colorado Construction Permits 94WE609 PSD, 99WE0762 PSD and 07WE1100, as modified under the provisions of Section I, Condition 1.3):

- 5.1.1 Concentration of Oxides of Nitrogen; ppmvd corrected to 15% O<sub>2</sub>, hourly average and 24-hour average (Turbine 4 only), in the exhaust;
- 5.1.2 Emissions of Oxides of Nitrogen; tons/month, rolling twelve month;
- 5.1.3 Concentration of Carbon Monoxide; ppmvd corrected to 15%  $O_2$ , hourly average, in the exhaust;
- 5.1.4 Emissions of Carbon Monoxide; lbs/hr, tons/month, rolling twelve month;
- 5.1.5 Average combustion turbine load;
- 5.1.6 Load at which steam turbine is operating;
- 5.1.7 Flow rate of pipe line quality natural gas;

### **5.2** General Provisions

- 5.2.1 The permittee shall operate the continuous emission monitoring systems as follows:
  - 5.2.1.1  $NO_X$  (and diluent) monitors: The permittee shall ensure that all

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

continuous emission and opacity monitoring systems required are in operation and monitoring unit emissions or opacity at all times that the unit combusts any fuel except as provided in 40 CFR Part 75 § 75.11(e) and during periods of calibration, quality assurance, or preventative maintenance performed pursuant to 40 CFR Part 75 § 75.21 and Appendix B, periods of repair, periods of backups of data from a data acquisition and handling system or recertification performed pursuant to 40 CFR Part 75 § 75.20. (40 CFR Part 75 § 75.10(d)).

- 5.2.1.2 **CO monitors:** The permittee shall ensure that all continuous emission monitoring systems required are in operation and monitoring unit emissions or opacity at all times except for monitoring system breakdowns, repairs, calibration checks and zero and span adjustments required under 40 CFR Part 60 Subpart A § 60.13(d) (40 CFR Part 60 Subpart A § 60.13(e)).
- 5.2.2 Alternative monitoring systems, alternative reference methods, or any other alternatives for the required continuous emission monitoring systems shall not be used without having obtained prior written approval from the appropriate agency, either the Division or the U.S. EPA, depending on which agency is authorized to approve such alternative under applicable law. Any alternative continuous emission monitoring systems must be certified in accordance with the requirements of 40 CFR Part 75 prior to use.
- 5.2.3 All test and monitoring equipment, methods, procedures and reporting shall be subject to the review and approval by the appropriate agency, either the Division or the U.S. EPA, depending on which agency is authorized to approve such alternative under applicable law, prior to any official use. The Division shall have the right to inspect such equipment, methods and procedures and data obtained at any time. The Division may provide a witness(s) for any and all tests as Division resources permit.
- 5.2.4 A file shall be maintained of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by applicable portions of 40 CFR Part 75 recorded in a permanent form suitable for inspection.
- Records shall be maintained of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the source; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative (40 CFR Part 60 Subpart A § 60.7(b), as adopted by reference in Colorado Regulation No. 6, Part A).

### **5.3** Equipment and QA/QC Requirements

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- Except as provided for below, the **CO monitors** are subject to the applicable requirements of 40 CFR Part 60 (94WE609 PSD and 07WE1100). The monitoring systems shall meet the equipment, installation and performance specifications of 40 CFR Part 60 Appendix B, Performance Specification 4/4A. These CEMS are subject to the quality assurance/quality control requirements in 40 CFR Part 60 Appendix F and Subpart A § 60.13.
  - 5.3.1.1 The CO CEMS data shall meet the applicable "primary equipment hourly operating requirements" for hourly average calculation methodology specified in 40 CFR Part 75 Subpart B § 75.10(d).
  - 5.3.1.2 Annual CO monitor relative accuracy (RA) testing will be performed in ppm @ 15% O2 measurement units, and will be performed according to 40 CFR Part 60, Appendix B, Performance Specification 4A.
  - 5.3.1.3 Relative accuracy test audit (RATA) frequency will be determined according to 40 CFR Part 75 Appendix B.
- Except as provided for below, the **NO**<sub>X</sub> (and diluent) monitors are subject to the applicable requirements of 40 CFR Part 75. The monitoring systems shall meet the equipment, installation and performance specification requirements in 40 CFR Part 75, Appendix A. These CEMS shall meet the quality assurance/quality control requirements in 40 CFR Part 75, Appendix B, the conversion procedures of Appendix F and the traceability protocols of Appendix H.
- 5.3.3 Quality assurance/quality control plans shall be prepared for the continuous emission monitoring systems as follows:
  - 5.3.3.1 The quality assurance/quality control plan for the **CO monitors** shall be prepared in accordance with the applicable requirements in 40 CFR Part 60, Appendix F.
  - 5.3.3.2 The quality assurance /quality control plan for the  $NO_X$  (and diluent) monitors shall be prepared in accordance with the applicable requirements in 40 CFR Part 75, Appendix B.

The quality assurance/quality control plans shall be made available to the Division upon request. Revisions shall be made to the plans at the request of the Division.

### **5.4** Data Substitution Requirements

When quality assured data is not available for oxides of nitrogen ( $NO_X$ ) and carbon monoxide (CO), the missing data substitution procedures set forth in 40 CFR Part 75 Subpart D shall be followed. Although carbon monoxide emissions are not specifically referenced in the Subpart D procedures, the CEM data acquisition system will be programmed to substitute carbon monoxide emissions using the same procedures specified for oxides of nitrogen (Colorado Construction Permit 94WE609 PSD, as modified under the provisions of Section I, Condition 1.3, as requested by letter received June 23, 1999 and Colorado Construction Permit 07WE1100).

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Replaced data shall be used to monitor compliance with the annual NO<sub>x</sub> and CO limitations.

### 5.5 Recordkeeping and Reporting Requirements

- 5.5.1 The owner or operator of a facility required to install, maintain, and calibrate continuous monitoring equipment shall submit to the Division, by the end of the calendar month following the end of each calendar quarter, a report of excess emissions for all pollutants monitored for that quarter (40 CFR Part 60 Subpart § 60.7(c)). This report shall consist of the following information and/or reporting requirements as specified by the Division:
  - 5.5.1.1 The magnitude of excess emissions computed in accordance with 40 CFR Part 60 Subpart A § 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions and the process operating time during the reporting period (40 CFR Part 60 Subpart A § 60.7(c)(1)).
  - 5.5.1.2 Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted (40 CFR Part 60 Subpart A § 60.7(c)(2)).
  - 5.5.1.3 The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments (40 CFR Part 60 Subpart A § 60.7(c)(3)).
  - When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report (40 CFR Part 60 Subpart A § 60.7(c)(4)).
- 5.5.2 The owner or operator of a facility required to install, maintain, and calibrate continuous monitoring equipment shall submit to the Division, by the end of the calendar month following the end of each calendar quarter, a summary report for that quarter (40 CFR Part 60 Subpart A § 60.7(c)). One summary report form shall be submitted for each pollutant monitored. This report shall contain the information and be presented in a format approved by the Division.

If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and continuous monitoring system (CMS) downtime is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in Condition 5.5.1. need not be submitted unless required by the Division (40 CFR Part 60 Subpart A § 60.7(d)(1)).

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in Condition 5.5.1 shall both be submitted (40 CFR Part 60 Subpart A § 60.7(d)(1)).

## 5.6 Specific Provisions for NSPS Subpart KKKK

The following requirements apply to Turbines 5 and 6 only.

- As specified in 40 CFR Part 60 Subpart KKKK § 60.4345(a), if a Part 75 NO<sub>X</sub> CEMS is used, the RATA shall be performed on a lb/mmBtu basis.
- As specified in 40 CFR Part 60 Subpart KKKK § 60.4350(d) and approved by the Division, only quality assured data from the CEMS shall be used to identified excess emissions. Periods where the missing data substitution procedures in Subpart D of Part 75 are applied are to be reported as monitor downtime in the excess emission reports specified in Condition 5.5.
- 5.6.3 For the purpose of reports required under Condition 5.5, periods of excess emissions and monitor downtime that must be reported are defined as follows:
  - 5.6.3.1 Excess emissions is any unit operating period in which the 4-hour rolling average NO<sub>X</sub> emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a "4-hour rolling average NO<sub>X</sub>e mission rate" is the arithmetic average of the average NO<sub>X</sub> emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO<sub>X</sub> emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO<sub>X</sub> mission rate is obtained for at least 3 of the 4 hours. (40 CFR Part 60 Subpart KKKK § 60.4380(b)(1))
  - A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO<sub>X</sub> concentration, CO<sub>2</sub> or O<sub>2</sub> concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes. (40 CFR Part 60 Subpart KKKK § 60.4380(b)(2))

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

## 6. M002 - Gasoline Storage Tank, 500 gallons aboveground

Parameter	Permit	Limitations		Compliance	Monitoring	
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
Gasoline Throughput	6.1	N/A	N/A	N/A	Recordkeeping	Monthly
40 CFR Pat 63 Subpart CCCCCC Requirements	6.2.	Work Practice Standards		N/A	See Condition 6.2	

Note that these emission units are exempt from the APEN reporting requirements in Regulation No. 3, Part A and the construction permit requirements in Regulation No. 3, Part B.

These requirements included in this Section II.6 are only federally enforceable. As of the date of revised permit issuance [August 12, 2008], the requirements in 40 CFR Part 63 Subpart CCCCCC have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements this tank will be subject to the APEN reporting and minor source permitting requirements and these requirements will be state-enforceable.

- 6.1 The quantity of gasoline processed through this tank shall be monitored and recorded monthly. Monthly records of gasoline processed shall be retained as required by Condition 6.2.1.
- 6.2 This tank is subject to the requirements in 40 CFR Part 63 Subpart CCCCCC, "National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities", as follows:
  - An affected source shall, upon request by the division, demonstrate that their average monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable (40 CFR Part 63 Subpart CCCCCC § 63.11111(e)).
  - 6.2.2 If you have an existing affected source, you must comply with the standard in this subpart no later than January 10, 2011 (40 CFR Part 63 Subpart CCCCCC § 63.11113(b)).
  - You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following (40 CFR Part 63 Subpart CCCCCC § 63.11116(a)):
    - 6.2.3.1 Minimize gasoline spills;
    - 6.2.3.2 Clean up spills as expeditiously as practicable;
    - 6.2.3.3 Cover all open gasoline containers and all gasoline storage tank fill-pipes

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

with a gasketed seal when not in use;

- 6.2.3.4 Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators;
- 6.2.4 You are not required to submit notifications or reports, but you must have records available within 24 hours of a request by the Division to document your gasoline throughput (40 CFR Part 63 Subpart CCCCCC § 63.11116(b)).
- 6.2.5 You must comply with the requirements of this subpart by the applicable date specified in Condition 6.2.2 (40 CFR Part 63 Subpart CCCCCC § 63.11116(c)).

### 7. M002 – Cold Cleaner Solvent Vats

Parameter Permit Condition		Lin	Limitations Compliance Emission Mo Factor		Monito	oring
	Number	Short Term	Long Term		Method	Interval
Work Practice Standards	7.1	N/A	N/A	N/A	Internal Audit	Annually
Transfer and Storage of Waste/Used Solvents	7.2	N/A	N/A	N/A	Certification	Annually

Note that these emission units are exempt from the APEN reporting requirements in Regulation No. 3, Part A and the construction permit requirements in Regulation No. 3, Part B.

- 7.1 Operation of the cold cleaner solvent vats shall meet the standards defined in Colorado Regulation 7, Section X.B. Compliance shall be monitored by following the work practices defined in Public Service Company's Policy Manual regarding operation, maintenance and design of the cold cleaner solvent vats. The Policy Manual shall include, at a minimum the requirements defined in Colorado Regulation 7, Section X.B and shall be available to the inspector upon request. Audits of the vat operations and/or the policy manual shall be performed annually to ensure that operations are performed within the requirements of the policy manual and that the policy manual incorporates the requirements of Regulation 7, Section X.B. Audit reports are to be maintained and made available to the Division upon request.
- 7.2 The transfer and storage of waste and used solvents from the cold cleaner solvent vats are subject to the following requirements (Colorado Regulation No. 7, Section X.A.3 and 4):
  - 7.2.1 In any disposal or transfer of waste or used solvent, at least 80 percent by weight of the solvent/waste liquid shall be retained (i.e., no more than 20 percent of the liquid solvent/solute mixture shall evaporate or otherwise be lost during transfers).
  - 7.2.2 Waste or used solvents shall be stored in closed containers unless otherwise required by law.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

# 8. T005 & T006 – Two (2) Simple Cycle Combustion Turbines

# Unless otherwise specified, the limitations apply to both turbines together

Parameter	Permit	Limitations		Compliance		itoring
	Condition Number	Short Term	Long Term	Emission Factor	Method	Interval
RACT Requirements	8.1	N/A	N/A	N/A	See Con	dition 8.1
NOx	8.2.	For Each Combustion Turbine:  9 ppmvd @ 15% O <sub>2</sub> on a 1-hr average, except as provided for below  During Combustion Tuning and Testing (not to exceed 60 hrs/yr per for both turbines combined):  100 ppmvd @ 15% O <sub>2</sub> on a 1-hr average  Note that the above limits do not apply during periods of startup and shutdown.  For Each Combustion Turbine:  15 ppmvd @ 15% O <sub>2</sub> , on a 4-hr rolling average  N/A  39.9 tons/yr		N/A	Continuous Emission Monitoring System	Continuously
СО	8.3.	N/A	20 tons/yr	N/A	Continuous Emission Monitoring System	Continuously
$SO_2$	8.4.	For Each Combustion Turbine: 0.06 lb/mmBtu		N/A See Condition 8		dition 8.4
		N/A	3.7 tons/yr		Continuous Monitoring System	Continuously
VOC	8.5.	N/A	2.3 tons/yr	T005: 0.0002 lb/mmBtu T006: 0.0001 lb/mmBtu	Recordkeeping and Calculation	Monthly

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Parameter	Permit		mitations	Compliance	Mon	itoring
	Condition Number	Short Terr	n Long Term	Emission Factor	Method	Interval
PM	8.6.	0.1 lb/mmBtu,	mbustion Turbine: the average of three 1-hr tests	N/A	Fuel Restriction	Only Pipeline Quality Natural Gas is Used as Fuel
		N/A	8.9 tons/yr	T005: 0.004 lb/mmBtu T006: 0.003 lb/mmBtu	Recordkeeping and Calculation	Monthly
PM <sub>10</sub>	8.7.	N/A	8.9 tons/yr	T005: 0.004 lb/mmBtu T006: 0.003 lb/mmBtu	Recordkeeping and Calculation	Monthly
Natural Gas Usage	8.8.	N/A	2,178 mmSCF/yr	N/A	Recordkeeping	Monthly
Sulfur Content of Natural Gas	8.9.	N/A	N/A	N/A	See Condition 8.9.	
Continuous Emission Monitoring System Requirements	8.10.	N/A	N/A	N/A	See Condition 8.10	
NSPS Subpart KKKK General Requirements	8.11	N/A	N/A	N/A	See Cond	lition 8.11.
NSPS General Provisions	8.12.	N/A	N/A	N/A	As Required by NSPS General Provisions	Subject to NSPS General Provisions
NO <sub>X</sub> Emissions from Insignificant Activities	8.13.	N/A	N/A	N/A	See Cond	dition 8.13
Opacity - State Only	8.14.	Not to	Exceed 20%	N/A	Fuel Restriction	Only Pipeline Quality Natural
Opacity	8.15.		ed 20% Except as for in 8.16 Below	N/A		Gas is Used as Fuel
Opacity	8.16.	For Certain Operational Activities - Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes		N/A		
Acid Rain Requirements	8.17.	S	See Section III of this F	Permit	Certification	Annually

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

- 8.1 The combustion turbines are subject to the Reasonably Available Control Technology Requirements (RACT) for NO<sub>X</sub> (Colorado Construction Permit 07WE1100 and Colorado Regulation No. 3, Part B, Section III.D.2.a). RACT has been determined to be advanced dry low NO<sub>X</sub> (DLN) combustion systems with the emission limitations specified in Condition 8.2.1.
- 8.2 Emissions of Nitrogen Oxides (NO<sub>X</sub>) shall not exceed the following limitations:
  - 8.2.1 For purposes of RACT, Nitrogen Oxide (NO<sub>X</sub>) emissions **from each turbine** shall not exceed the following limitations (Colorado Construction Permit 07WE1100):
    - 8.2.1.1 Except as provided for below, emissions of  $NO_X$  shall not exceed 9 ppmvd at 15%  $O_2$ , on a 1-hour average.
    - 8.2.1.2 During periods of combustion tuning and testing, emissions of NO<sub>X</sub> shall not exceed 100 ppmvd at 15% O<sub>2</sub>, on a 1-hour average. Use of this NO<sub>X</sub> emission limit for purposes of combustion tuning and testing shall not exceed 60 hours in any calendar year **for both turbines combined**. Records of the number of hours each turbine undergoes combustion tuning and/or testing shall be recorded and maintained and made available to the Division upon request.
    - 8.2.1.3 The emission limitations above do not apply during periods of startup and shutdown; however, emissions during startup and shutdown shall be included in determining compliance with the annual limitation in Condition 8.2.3.
    - 8.2.1.4 "Startup" shall have the same definition as provided for in Condition 1.2.1.5.
    - 8.2.1.5 "Shutdown" shall have the same definition as provided for in Condition 1.2.1.6.
    - 8.2.1.6 "Combustion Tuning and Testing" shall have the same definition as provided for in Condition 1.2.1.7.

Compliance with the  $NO_X$  RACT emission limitations in Conditions 8.2.1.1 and 8.2.1.2 shall be monitored using the continuous emission monitoring systems (CEMS) required by Condition 8.10. All valid CEMS concentration (ppm) data points, excluding startup and shutdown data points, shall at the end of each clock hour, be summarized to generate the average  $NO_X$  concentration. Each clock hour average  $NO_X$  concentration shall be compared to the limitations in Conditions 8.2.1.1 and 8.2.1.2 as appropriate.

In the event that the startup ends within a clock hour or the shutdown begins within a clock hour, all non-startup and/or non-shutdown concentration (ppm) data points within that clock hour shall be averaged together to generate the average  $NO_X$  concentration and that average concentration shall be compared to the limitations in Conditions 8.2.1.1 and 8.2.1.2 as appropriate.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Within 60 days after renewal permit issuance [January 1, 2011], the data acquisition and handling system (DAHS) shall be programmed to address the revised compliance calculations set forth above for the emission limits in Conditions 8.2.1.1 and 8.2.1.2. Prior to re-programming the DAHS, all valid CEMS concentration data points shall, at the end of each hour, be summarized to generate the average NOX concentration. The emission limits in Condition 8.2.1.1 and 8.2.1.2 apply to any clock hour of operation that does not include any data from a startup or shutdown.

The emission limits in Condition 8.2.1.2 apply to any clock hour in which combustion tuning and testing activities occur.

NO<sub>X</sub> emissions shall not exceed 15 ppm at 15 % O<sub>2</sub>, on a 4-hr rolling average (Colorado Construction Permit 07WE1100 and 40 CFR Part 60 Subpart KKKK §§ 60.4320(a) 69.4350(g)). Compliance with the NO<sub>X</sub> emission limitations shall be monitored using the CEMS required by Condition 8.10.

Note that the  $NO_X$  emission limits are not applicable during times of startup, shutdown and malfunction. However, those instances during startup, shutdown and malfunction when the  $NO_X$  limitation is exceeded shall be identified in the excess emission reports required by Condition 5.5.

8.2.3 Annual emissions of NO<sub>X</sub> from both turbines together shall not exceed the above limitation (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Monthly emissions from each turbine shall be determined using the continuous emission monitoring system required by Condition 8.10. Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months total.

For purposes of determining compliance with the annual limitation, mass emissions shall be recorded during all periods when a unit is in operation and burning fuel, including periods of startup and shutdown.

8.3 Annual emissions for CO **from both turbines together** shall not exceed the above limitation (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Monthly emissions from each turbine shall be determined using the continuous emission monitoring system required by Condition 8.10. Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual emission limitation. Each month a new twelve month total shall be calculated using the previous twelve months total.

For purposes of determining compliance with the annual limitation, mass emissions shall be recorded during all periods when a unit is in operation and burning fuel, including periods of startup and shutdown.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 8.4 Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed the following limitations:
  - 8.4.1 You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input. (40 CFR Part 60 Subpart KKKK § 60.4330(a)(2)) In the absence of credible evidence to the contrary, compliance with the fuel gas sulfur limit is presumed since only pipeline quality natural gas is used as fuel in these turbines. The natural gas used as fuel shall meet the requirements in Condition 8.9.
  - 8.4.2 Annual Sulfur Dioxide (SO<sub>2</sub>) emissions **from both turbines together** shall not exceed the above limitations (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Compliance with the annual SO<sub>2</sub> emission limitations shall be monitored using the monitoring method specified in 40 CFR Part 75 Appendix D.

Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

8.5 Annual VOC emissions **from both turbines together** shall not exceed the above limitations (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Monthly emissions from each turbine shall be calculated by the end of the subsequent month using the emission factors in the above table (from performance tests conducted May 20 & 21, 2009) and the heat input for the month as recorded on the data acquisition and handling system (DAHS) for the continuous emission monitoring system (required by Condition 8.10) in the following equation:

tons/mo = (EF, lbs/mmBtu) x heat input (mmBtu/mo)2000 lbs/ton

Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 8.6 Particulate matter (PM) emissions shall not exceed the following limitations:
  - 8.6.1 Particulate Matter (PM) emissions **from each turbine** shall not exceed 0.1 lbs/mmBtu (Colorado Construction Permit 07WE1100 and Colorado Regulation No. 1, Section III.A.1.c). In the absence of credible evidence to the contrary, compliance with the particulate matter emission limits is presumed since only pipeline natural gas is permitted to be used as fuel in the turbines.
  - 8.6.2 Annual PM emissions **from both turbines together** shall not exceed the above limitations (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Monthly

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

emissions from each turbine shall be calculated by the end of the subsequent month using the emission factors in the above table (from performance tests conducted May 20 & 21, 2009) and the heat input for the month as recorded on the data acquisition and handling system (DAHS) for the continuous emission monitoring system (required by Condition 8.10) in the equation in condition 8.5 Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.

- 8.7 Annual PM<sub>10</sub> emissions **from both turbines together** shall not exceed the above limitations (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). Monthly emissions from each turbine shall be calculated by the end of the subsequent month using the emission factors in the above table (from performance tests conducted May 20 & 21, 2009) and the heat input for the month as recorded on the data acquisition and handling system (DAHS) for the continuous emission monitoring system (required by Condition 8.10) in the equation in condition 8.5 Monthly emissions from each turbine shall be summed together and used in a twelve month rolling total to monitor compliance with the annual limitations. Each month a new twelve month total shall be calculated using the previous twelve months data.
- Natural gas consumption **for both turbines together** shall not exceed the above limitations (Colorado Construction Permit 07WE1100, as modified under the provisions of Section I, Condition 1.3 to remove the monthly limitations). The natural gas consumption for each combustion turbine shall be monitored using the data acquisition and handling systems (DAHS) for the continuous emission monitoring system (CEMS) required by Condition 8.10. Monthly natural gas fuel consumption for each turbine shall be summed together and used in a rolling twelve month total to monitor compliance with the annual limitation. Each month new twelve month rolling total shall be calculated using the previous twelve months data for that fuel.
- 8.9 The permittee shall maintain records demonstrating that the natural gas burned has a total sulfur content less than 0.5 grains/100 SCF. Natural gas that meets this sulfur limitation is considered pipeline quality natural gas as defined in 40 CFR Part 72. The demonstration shall be made using any of the methods identified in 40 CFR Part 75 Appendix D, Section 2.3.1.4. These records shall be made available to the Division upon request.
- 8.10 **For each combustion turbine**, continuous emission monitoring systems (CEMS) shall be installed, calibrated, maintained and operated (Colorado Construction Permit 07WE1100 and 40 CFR Part 75). The CEMS shall meet the following requirements:
  - 8.10.1 The Monitoring Requirements identified in Condition 5.1.
  - 8.10.2 The General Provisions identified in Condition 5.2.
  - 8.10.3 The Equipment and QA/QC Requirements identified in Condition 5.3.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

- 8.10.4 The Data Substitution Requirements identified in Condition 5.4.
- 8.10.5 The Recordkeeping and Reporting Requirements identified in Condition 5.5.
- 8.10.6 The Specific Provisions for NSPS Subpart KKKK in Condition 5.6.
- 8.11 You must operate and maintain your stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. (40 CFR Part 60 Subpart KKKK § 60.4333(a))
- 8.12 **Each turbine** is subject to the NSPS Subpart A, General Provisions requirements (Colorado Regulation No. 6, Part A, Federal 40 CFR 60.1 through 60.19). Specifically, these units are subject to the following:
  - 8.12.1 No article, machine, equipment or process shall be used to conceal an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gasses discharged to the atmosphere. (40 CFR § 60.12)
  - 8.12.2 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. (40 CFR § 60.11(d)).
- 8.13 NO<sub>X</sub> emissions from all insignificant activities associated with these turbines shall be included in monitoring compliance with the annual NO<sub>X</sub> emission limitation in Condition 8.2.3 (Colorado Construction Permit 07WE1100). The permittee shall track emissions from all NO<sub>X</sub> emitting insignificant activities associated with these turbines on a monthly basis and include those emissions in the annual emission calculations specified in Condition 8.2.3. This information shall be kept on site and made available to the Division upon request. For the purposes of this condition, insignificant activities shall be defined as any activity or equipment, which emits any amount but does not require an Air Pollution Emission Notice (APEN).
  - Based on the information available as of permit issuance [January 1, 2011] there are no insignificant activities associated with turbines 5 and 6 that are a source of  $NO_X$  emissions.
- 8.14 Except as provided for in Condition 8.15 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Construction Permit 07WE1100 and Colorado Regulation No. 1, Section II.A.1). This

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

opacity standard applies to **each combustion turbine**. In the absence of credible evidence to the contrary, compliance with the 20% opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines.

- 8.15 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from the building of a new fire, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Construction Permit 07WE1100 and Colorado Regulation No. 1, Section II.A.4). This opacity standard applies to **each combustion turbine.** In the absence of credible evidence to the contrary, compliance with the 30% opacity limit shall be presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines.
- 8.16 **State-Only Requirement:** No owner or operator may discharge, or cause the discharge into the atmosphere of any particulate matter which is greater than 20% opacity (Colorado Regulation No. 6, Part B, Section II.C.3). This opacity standard applies to **each combustion turbine.** In the absence of credible evidence to the contrary, compliance with the 20% opacity requirement is presumed since only pipeline quality natural gas is permitted to be used as fuel in the turbines.
  - This opacity standard applies at all times except during periods of startup, shutdown and malfunction (40 CFR Part 60 Subpart A § 60.11(c), as adopted by reference in Colorado Regulation No. 6, Part B, Section I.A).
- 8.17 This unit is subject to the Title IV Acid Rain Requirements. As specified in 40 CFR Part 72.72(b)(1)(viii), the acid rain permit requirements shall be complete and segregable portion of the Operating Permit. As such the requirements are found in Section III of this permit.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

## 9. M004 - Diesel Fuel Fired Internal Combustion Engines

# Emergency Generator (2 engines, each 1,800 hp) and Emergency Fire Pump (255 hp) Unless otherwise specified, the requirements apply to each engine

Parameter	Permit Condition	Limita	ations	Compliance Emission Factor	Monit	oring
	Number	Short Term	Long Term		Method	Interval
MACT ZZZZ Requirements	9.1.	Change Oil and Filter Inspect Air Cleaner Inspect all Hoses and Belts		N/A	See Cond	ition 9.1.
$SO_2$	9.2.	0.8 lbs/mmBtu		N/A	Fuel Restriction	Only Diesel Fuel is Used as Fuel
Opacity	9.3	Not to Exceed : Provided to	•	N/A	EPA Method 9	See Condition 9.3
		For Startup – Not to Exceed 30%, for a Period or Periods Aggregating More than Six (6) Minutes in any 60 Consecutive Minutes				
MACT General Provisions	5.4.	N/A	N/A	N/A	See Cond	ition 9.4

Note that these emission units are exempt from the APEN reporting requirements in Regulation No. 3, Part A and the construction permit requirements in Regulation No. 3, Part B.

9.1 These engines are subject to the requirements in 40 CFR Part 63 Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines", as follows:

These requirements included in this Condition 9.1 are only federally enforceable. As of the date of revised permit issuance [January 1, 2011], the requirements in 40 CFR Part 63 Subpart ZZZZ promulgated on March 3, 2010 have not been adopted into Colorado Regulation No. 8, Part E by the Division and are therefore not state-enforceable. In the event that the Division adopts these requirements these engines will be subject to the APEN reporting and minor source permitting requirements and these requirements will be state-enforceable.

When do I have to comply with this subpart (§ 60.6595)

9.1.1 If you have an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than May 3, 2013. (§ 63.6595(a)(1))

What emission limitations and operating limitations must I meet if I own or operate an existing CI RICE located at an area source of HAP emissions (§ 63.6603)

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 9.1.2 If you own or operate an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart which apply to you. (§ 63.6603(a)) The requirements in Table 2d that apply to these emergency CI RICE are as follows:
  - 9.1.2.1 Change oil and filter every 500 hours of operation or annually whichever comes first. (Table 2d, item 4.a)
  - 9.1.2.2 Inspect air cleaner every 1,000 hours of operation or annually whichever comes first. (Table 2d, item 4.b)
  - 9.1.2.3 Inspect all hoses and belts every 500 hours of operation or annually whichever comes first, and replace as necessary. (Table 2d, item 4.c)

Notwithstanding the above requirements, the following applies:

- 9.1.2.4 Sources have the option to utilize an oil analysis program as described in Condition 9.1.8 in order to extend the specified oil change requirement in Condition 9.1.2.1. (Table 2d, footnote 1)
- 9.1.2.5 If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Conditions 9.1.2.1 through 9.1.2.3, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable. (Table 2d, footnote 2)

What are my general requirements for complying with this subpart? (§ 63.6605)

- 9.1.3 You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times. (§ 63.6605(a))
- 9.1.4 At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Division which may include, but is not

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (§ 63.6605(b))

What are my monitoring, installation, collection, operation, and maintenance requirements? (§ 63.6625)

- 9.1.5 If you own or operate an existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions, an existing stationary emergency RICE, or an existing stationary RICE located at an area source of HAP emissions not subject to any numerical emission standards shown in Table 2d to this subpart, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. (§ 63.6625(e))
- 9.1.6 If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed. (§ 63.6625(g))
- 9.1.7 If you operate a new or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply. (§ 63.6625(h))
- 9.1.8 If you own or operate a stationary engine that is subject to the work, operation or management practices in Condition 9.1.2.1, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 9.1.2.1. The oil analysis must be performed at the same frequency specified for changing the oil in Condition 9.1.2.1. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil before continuing to use the engine. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. (§ 63.6625(i))

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

How do I demonstrate continuous compliance with the emission limitations and operating limitations? (§ 63.6640)

- 9.1.9 If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a new emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that was installed on or after June 12, 2006, or an existing emergency stationary RICE located at an area source of HAP emissions, you must operate the engine according to the conditions described below. (§ 63.6640(f))
  - 9.1.9.1 For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited. (§ 63.6640(f)(1))
  - 9.1.9.2 There is no time limit on the use of emergency stationary RICE in emergency situations. (§ 63.6640(f)(2))
  - 9.1.9.3 You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. (§ 63.6640(f)(3))
  - 9.1.9.4 You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this Condition 9.1.9.4, as long as the power provided by the financial arrangement is limited to emergency power. (§ 63.6640(f)(4))

What records must I keep? (§ 63.6655)

- 9.1.10 You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate an existing stationary CI RICE located at an area source of HAP emissions subject to management practices as shown in Conditions 9.1.2.1 through 9.1.2.3. (§ 63.6655(e) and § 63.6655(e)(3))
- 9.1.11 If you own or operate an existing emergency stationary CI RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. (§ 63.6655(f) and § 63.6655(f)(2))
- 9.2 Sulfur Dioxide (SO<sub>2</sub>) emissions shall not exceed 0.8 lbs/mmBtu (Colorado Regulation No. 1, Section VI.B.4.b.(i)). In the absence of credible evidence to the contrary, compliance with the SO<sub>2</sub> emission limitation shall be presumed since only diesel fuel is permitted to be used as fuel in these engines.
- 9.3 Opacity of emissions from the engine shall not exceed the following:
  - 9.3.1 Except as provided for in Condition 9.3 below, no owner or operator of a source shall allow or cause the emission into the atmosphere of any air pollutant which is in excess of 20% opacity (Colorado Regulation No. 1, Section II.A.1).
  - 9.3.2 No owner or operator of a source shall allow or cause to be emitted into the atmosphere any air pollutant resulting from startup which is in excess of 30% opacity for a period or periods aggregating more than six (6) minutes in any sixty (60) consecutive minutes (Colorado Regulation No. 1, Section II.A.4).

Compliance with these limitations shall be monitored by conducting opacity observations in accordance with EPA Reference Method 9 as follows:

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

- 9.3.3 An engine startup period of less than 60 minutes shall not require a startup opacity observation. If the engine startup period is greater than 60 minutes, one opacity observation shall be made for each consecutive 4 hour period of startup during daylight hours. In addition, a record shall be kept of the date and time the engine started and when it was shutdown.
- 9.3.4 Continued operation of the engine after the completion of the startup period shall require monthly opacity observations. If the startup and operation of the engine lasts less than a total of 4 hours from engine start to engine stop, in any one day no opacity observations are required for that day.
- 9.3.5 If no opacity observations are made pursuant to Conditions 9.3.3 and 9.3.4 above, then an opacity observation shall be conducted annually.
- 9.3.6 All opacity observations shall be performed by an observer with current and valid Method 9 certification. Results of Method 9 readings and a copy of the certified Method 9 reader's certificate shall be kept on site and made available to the Division upon request.
- 9.4 These engines are subject to the requirements in 40 CFR part 63 Subpart A "General Provisions", as adopted by reference in Colorado Regulation No. 8, Part E, Section I as specified in 40 CFR Part 63 Subpart ZZZZ § 63.6665. These requirements include, but are not limited to the following:
  - 9.4.1 Prohibited activities in § 63.4(a).
  - 9.4.2 Circumvention in § 63.4(b)

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

## **SECTION III - Acid Rain Requirements**

# 1. Designated Representative and Alternate Designated Representative

Designated Representative:

Name: George Hess

Title: General Manager – Power Generation, Colorado

Phone: (303) 571-7282

Alternate Designated Representative:

Name: Quinn Kilty

Title: Manager, Air and Water Quality

Phone: (303) 294-2165

## 2. Sulfur Dioxide Emission Allowances and Nitrogen Oxide Emission Limitations

	2010	2011	2012	2013	2014	2015
Turbine No. 2						
SO <sub>2</sub> Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*
NO <sub>X</sub> Limits		This U	nit Has No Title IV	NO <sub>X</sub> Limits (see S	ection 5)	
Turbine No. 3						
SO <sub>2</sub> Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*
NO <sub>X</sub> Limits		This U	nit Has No Title IV	NO <sub>X</sub> Limits (see S	ection 5)	
Turbine No. 4						
SO <sub>2</sub> Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*
NO <sub>X</sub> Limits		This U	nit Has No Title IV	NO <sub>X</sub> Limits (see S	ection 5)	•

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

	2010	2011	2012	2013	2014	2015		
Turbine No. 5								
SO <sub>2</sub> Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*		
NO <sub>X</sub> Limits	This Unit Has No Title IV NO <sub>X</sub> Limits (see Section 5)							
Turbine No. 6								
SO <sub>2</sub> Allowances, per 40 CFR Part 73.10(b), Table 2	0*	0*	0*	0*	0*	0*		
NO <sub>X</sub> Limits		This Unit Has No Title IV NO <sub>X</sub> Limits (see Section 5)						

<sup>\*</sup> Under the provisions of § 72.84(a) any allowance allocations to, transfers to and deductions from an affected unit's Allowance Tracking System account is considered an automatic permit amendment and as such no revision to the permit is necessary. This is a new unit and allowances were not included in 40 CFR Part 73, Table 2 (1997 version of CFR).

## 3. Standard Requirements

Units T002, T003, T004, T005 and T006 of this facility are subject to and the source has certified that they will comply with the following standard conditions.

### Permit Requirements.

- (1) The designated representative of each affected source and each affected unit at the source shall:
  - (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
  - (ii) Submit in a timely manner any supplemental information that the Division determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each affected source and each affected unit at the source shall:
  - (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the Division; and
  - (ii) Have an Acid Rain Permit.

### Monitoring Requirements.

- (1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by source or the unit with the Acid Rain emissions limitations and

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

- emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Federal Clean Air Act and other provisions of the operating permit for the source.

## Sulfur Dioxide Requirements.

- (1) The owners and operators of each source and each affected unit at the source shall:
  - (i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and
  - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Federal Clean Air Act.
- (3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
  - (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
  - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

### Nitrogen Oxides Requirements.

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

### Excess Emissions Requirements.

- (1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan to the Administrator of the U. S. EPA, as required under 40 CFR part 77.
- (2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
  - (i) Pay without demand, to the Administrator of the U. S. EPA, the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
  - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

### Recordkeeping and Reporting Requirements.

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or the Division:
  - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
  - (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
  - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
  - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

### Liability.

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Federal Clean Air Act.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Federal Clean Air Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Federal Clean Air Act.

### Effect on Other Authorities.

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:

- (1) Except as expressly provided in title IV of the Federal Clean Air Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Federal Clean Air Act, including the provisions of title I of the Federal Clean Air Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
- (2) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Federal Clean Air Act;
- (3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
- (4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
- (5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

### 4. Reporting Requirements

Reports shall be submitted to the addresses identified in Appendix D.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

Public Service Company of Colorado Ft. St. Vrain Station Page 67

Pursuant to 40 CFR Part 75.64 quarterly reports and compliance certification requirements shall be submitted to the Administrator within 30 days after the end of the calendar quarter. The contents of these reports shall meet the requirements of 40 CFR 75.64.

Pursuant to 40 CFR Part 75.65 excess emissions of opacity shall be reported to the Division. These reports shall be submitted in a format approved by the Division.

Revisions to this permit shall be made in accordance with 40 CFR Part 72, Subpart H, §§ 72.80 through 72.85 (as adopted by reference in Colorado Regulation 18). Permit modification requests shall be submitted to the Division at the address identified in Appendix D.

# 5. Comments, Notes and Justifications

Combustion Turbines No. 2, 3, 4, 5 and 6 burn only natural gas as fuel. The  $NO_X$  limitations in 40 CFR Part 76 are only applicable to coal-fired utility units.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

### **SECTION IV - Permit Shield**

Regulation No. 3, 5 CCR 1001-5, Part C, §§ I.A.4, V.D., & XIII.B and § 25-7-114.4(3)(a), C.R.S.

# 1. Specific Non-Applicable Requirements

Based upon the information available to the Division and supplied by the applicant, the following parameters and requirements have been specifically identified as non-applicable to the facility to which this permit has been issued. This shield does not protect the source from any violations that occurred prior to or at the time of permit issuance. In addition, this shield does not protect the source from any violations that occur as a result of any modification or reconstruction on which construction commenced prior to permit issuance.

Emission Unit Description & Number	Applicable Requirement	Justification
Facility	Colorado Regulation No. 7, Section V.B	This requirement is not applicable since the facility is not a bulk gasoline terminal, bulk gasoline plant or gas dispensing facility.
Facility	Colorado Regulation No. 7, Sections VI.B.1 & 2	These requirements are not applicable as the petroleum liquids at this facility are stored in tanks that are less than 40,000 gallons.
Facility	Colorado Regulation No. 7, Section VII.C	This requirement is not applicable as crude oil is not stored in tanks exceeding 40,000 gallons.
Cooling Towers	40 CFR Part 63, Subpart Q (as adopted by reference in Colorado Regulation No. 8, Section E)	These requirements are not applicable because the cooling towers do not use chromium-based water treatment chemicals.

# 2. General Conditions

Compliance with this Operating Permit shall be deemed compliance with all applicable requirements specifically identified in the permit and other requirements specifically identified in the permit as not applicable to the source. This permit shield shall not alter or affect the following:

- 2.1 The provisions of §§ 25-7-112 and 25-7-113, C.R.S., or § 303 of the federal act, concerning enforcement in cases of emergency;
- 2.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- 2.3 The applicable requirements of the federal Acid Rain Program, consistent with § 408(a) of the federal act;
- 2.4 The ability of the Air Pollution Control Division to obtain information from a source pursuant to § 25-7-111(2)(I), C.R.S., or the ability of the Administrator to obtain information pursuant to § 114 of the federal act:

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- 2.5 The ability of the Air Pollution Control Division to reopen the Operating Permit for cause pursuant to Regulation No. 3, Part C, § XIII.
- 2.6 Sources are not shielded from terms and conditions that become applicable to the source subsequent to permit issuance.

## 3. Streamlined Conditions

The following applicable requirements have been subsumed within this operating permit using the pertinent streamlining procedures approved by the U.S. EPA. For purposes of the permit shield, compliance with the listed permit conditions will also serve as a compliance demonstration for purposes of the associated subsumed requirements.

Permit Condition(s)	Streamlined (Subsumed) Requirements
Section II, Conditions 1.4.1, 2.4.3 and 8.4.1.	Colorado Regulation No. 6, Part B, Section II.D.3.b [SO <sub>2</sub> emissions shall not exceed 0.35 lbs/mmBtu] - <b>State-only requirement</b>
Section II, Condition 1.2.1.2	40 CFR Part 60 Subpart Da § 60.44Da(a)(2), as adopted by reference in Colorado Regulation No. 6, Part A [NO <sub>X</sub> emissions shall be reduced by 25 percent of the potential combustion concentration]
Section II, Condition 1.2.1.2	40 CFR Part 60 Subpart Da § 60.44Da(a)(1), as adopted by reference in Colorado Regulation No. 6, Part A [NO <sub>X</sub> emissions shall not exceed 0.20 lbs/mmBtu]
Section II, Conditions 1.2.1 (Turbines 2 and 3) and 2.5.1 (Turbine 4)	40 CFR Part 60 Subpart GG $\S$ 60.332(a), as adopted by reference in Colorado Regulation No. 6, Part A [NO <sub>X</sub> emissions shall not exceed 105.4 ppmvd (for Turbines 2 and 3) and 112 ppmvd (for Turbine 4), each at 15% O <sub>2</sub> and ISO standard ambient conditions]
Section II, Conditions 1.9 and 2.10	40 CFR Part 60 Subpart GG § 60.334(h)(3), as adopted by reference in Colorado Regulation No. 6, Part A [source shall monitor the sulfur content of the fuel]
Section II, Conditions 1.10 and 2.8	40 CFR Part 60 Subpart GG § 60.334(j)(1)(iii), as adopted by reference in Colorado Regulation No. 6, Part A [NO <sub>X</sub> excess emission reporting]
Section II, Condition 1.9	Colorado Construction Permit 94WE609 PSD, <u>only</u> the following portion of Condition 9 "an automatic natural gas sampler shall be installed in the gas supply line that automatically samples each 40 mmSCF, and shall be analyzed monthly"
Section II, Conditions 5.2 and 5.3	Colorado Construction Permit 99WE0762 PSD, Conditions 7.d & i and 4 [continuous emission monitoring systems shall meet the requirements in 40 CFR Part 60] for the $NO_X$ and diluent continuous emission monitoring systems only.
Section II, Conditions 5.2 and 5.3	Colorado Construction Permit 94WE609 PSD, Conditions 3.i & n [Notification of demonstration of continuous emission monitoring system (CEMS) and CEMS quality assurance and quality control requirements] for the NO <sub>X</sub> and diluent continuous emission monitoring systems only.
Section II, Conditions 2.5.1.2 and 2.9	40 CFR Part 60 Subpart Da § 60.44Da(d)(1), as adopted by reference in Colorado Regulation No. 6, Part A [NO <sub>X</sub> emissions shall not exceed 1.6 lbs/MW-hr]
Section II, Condition 8.4.1	Colorado Regulation No. 1, Section VI.B.4.c.(ii) and VI.B.2 (SO2 emissions shall not exceed 0.35 lbs/mmBtu on a 3-hr rolling average]

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

### **SECTION V - General Permit Conditions**

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### 1. Administrative Changes

### Regulation No. 3, 5 CCR 1001-5, Part A, § III.

The permittee shall submit an application for an administrative permit amendment to the Division for those permit changes that are described in Regulation No. 3, Part A, § I.B.1. The permittee may immediately make the change upon submission of the application to the Division.

### 2. Certification Requirements

## Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.9., V.C.16.a.& e. and V.C.17.

- a. Any application, report, document and compliance certification submitted to the Air Pollution Control Division pursuant to Regulation No. 3 or the Operating Permit shall contain a certification by a responsible official of the truth, accuracy and completeness of such form, report or certification stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- b. All compliance certifications for terms and conditions in the Operating Permit shall be submitted to the Air Pollution Control Division at least annually unless a more frequent period is specified in the applicable requirement or by the Division in the Operating Permit.
- c. Compliance certifications shall contain:
  - (i) the identification of each permit term and condition that is the basis of the certification;
  - (ii) the compliance status of the source;
  - (iii) whether compliance was continuous or intermittent;
  - (iv) method(s) used for determining the compliance status of the source, currently and over the reporting period; and
  - such other facts as the Air Pollution Control Division may require to determine the compliance status of the source.
- d. All compliance certifications shall be submitted to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit.
- e. If the permittee is required to develop and register a risk management plan pursuant to § 112(r) of the federal act, the permittee shall certify its compliance with that requirement; the Operating Permit shall not incorporate the contents of the risk management plan as a permit term or condition.

### 3. Common Provisions

### Common Provisions Regulation, 5 CCR 1001-2 §§ II.A., II.B., II.C., II, E., II.F., II.I, and II.J

a. To Control Emissions Leaving Colorado

When emissions generated from sources in Colorado cross the State boundary line, such emissions shall not cause the air quality standards of the receiving State to be exceeded, provided reciprocal action is taken by the receiving State.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

# b. Emission Monitoring Requirements

The Division may require owners or operators of stationary air pollution sources to install, maintain, and use instrumentation to monitor and record emission data as a basis for periodic reports to the Division.

#### c. Performance Testing

The owner or operator of any air pollution source shall, upon request of the Division, conduct performance test(s) and furnish the Division a written report of the results of such test(s) in order to determine compliance with applicable emission control regulations.

Performance test(s) shall be conducted and the data reduced in accordance with the applicable reference test methods unless the Division:

- (i) specifies or approves, in specific cases, the use of a test method with minor changes in methodology;
- (ii) approves the use of an equivalent method;
- (iii) approves the use of an alternative method the results of which the Division has determined to be adequate for indicating where a specific source is in compliance; or
- (iv) waives the requirement for performance test(s) because the owner or operator of a source has demonstrated by other means to the Division's satisfaction that the affected facility is in compliance with the standard. Nothing in this paragraph shall be construed to abrogate the Commission's or Division's authority to require testing under the Colorado Revised Statutes, Title 25, Article 7, and pursuant to regulations promulgated by the Commission.

Compliance test(s) shall be conducted under such conditions as the Division shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Division such records as may be necessary to determine the conditions of the performance test(s). Operations during period of startup, shutdown, and malfunction shall not constitute representative conditions of performance test(s) unless otherwise specified in the applicable standard.

The owner or operator of an affected facility shall provide the Division thirty days prior notice of the performance test to afford the Division the opportunity to have an observer present. The Division may waive the thirty day notice requirement provided that arrangements satisfactory to the Division are made for earlier testing.

The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

- (i) Sampling ports adequate for test methods applicable to such facility;
- (ii) Safe sampling platform(s);
- (iii) Safe access to sampling platform(s); and
- (iv) Utilities for sampling and testing equipment.

Each performance test shall consist of at least three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of at least three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

circumstances beyond the owner or operator's control, compliance may, upon the Division's approval, be determined using the arithmetic mean of the results of the two other runs.

Nothing in this section shall abrogate the Division's authority to conduct its own performance test(s) if so warranted.

d. Affirmative Defense Provision for Excess Emissions during Malfunctions

Note that until such time as the U.S. EPA approves this provision into the Colorado State Implementation Plan (SIP), it shall be enforceable only by the State.

An affirmative defense to a claim of violation under these regulations is provided to owners and operators for civil penalty actions for excess emissions during periods of malfunction. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of evidence that:

- (i) The excess emissions were caused by a sudden, unavoidable breakdown of equipment, or a sudden, unavoidable failure of a process to operate in the normal or usual manner, beyond the reasonable control of the owner or operator;
- (ii) The excess emissions did not stem from any activity or event that could have reasonably been foreseen and avoided, or planned for, and could not have been avoided by better operation and maintenance practices;
- (iii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded;
- (iv) The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;
- (v) All reasonably possible steps were taken to minimize the impact of the excess emissions on ambient air quality;
- (vi) All emissions monitoring systems were kept in operation (if at all possible);
- (vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence;
- (viii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- (ix) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This section is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement; and
- (x) During the period of excess emissions, there were no exceedances of the relevant ambient air quality standards established in the Commissions' Regulations that could be attributed to the emitting source.

The owner or operator of the facility experiencing excess emissions during a malfunction shall notify the division verbally as soon as possible, but no later than noon of the Division's next working day, and shall submit written notification following the initial occurrence of the excess emissions by the end of the source's next reporting period. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to failures to meet federally promulgated performance standards or emission limits, including, but not limited to, new source performance standards and national emission standards

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

for hazardous air pollutants. The affirmative defense provision does not apply to state implementation plan (sip) limits or permit limits that have been set taking into account potential emissions during malfunctions, including, but not necessarily limited to, certain limits with 30-day or longer averaging times, limits that indicate they apply during malfunctions, and limits that indicate they apply at all times or without exception.

#### e. Circumvention Clause

A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of air pollutants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of this regulation. No person shall circumvent this regulation by using more openings than is considered normal practice by the industry or activity in question.

### f. Compliance Certifications

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in the Colorado State Implementation Plan, nothing in the Colorado State Implementation Plan shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. Evidence that has the effect of making any relevant standard or permit term more stringent shall not be credible for proving a violation of the standard or permit term.

When compliance or non-compliance is demonstrated by a test or procedure provided by permit or other applicable requirement, the owner or operator shall be presumed to be in compliance or non-compliance unless other relevant credible evidence overcomes that presumption.

# g. Affirmative Defense Provision for Excess Emissions During Startup and Shutdown

An affirmative defense is provided to owners and operators for civil penalty actions for excess emissions during periods of startup and shutdown. To establish the affirmative defense and to be relieved of a civil penalty in any action to enforce an applicable requirement, the owner or operator of the facility must meet the notification requirements below in a timely manner and prove by a preponderance of the evidence that:

- (i) The periods of excess emissions that occurred during startup and shutdown were short and infrequent and could not have been prevented through careful planning and design;
- (ii) The excess emissions were not part of a recurring pattern indicative of inadequate design, operation or maintenance;
- (iii) If the excess emissions were caused by a bypass (an intentional diversion of control equipment), then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (iv) The frequency and duration of operation in startup and shutdown periods were minimized to the maximum extent practicable;
- (v) All possible steps were taken to minimize the impact of excess emissions on ambient air quality;
- (vi) All emissions monitoring systems were kept in operation (if at all possible);
- (vii) The owner or operator's actions during the period of excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence; and,
- (viii) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions. This subparagraph is intended solely to be a factor in determining whether an affirmative defense is available to an owner or operator, and shall not constitute an additional applicable requirement.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

The owner or operator of the facility experiencing excess emissions during startup and shutdown shall notify the Division verbally as soon as possible, but no later than two (2) hours after the start of the next working day, and shall submit written quarterly notification following the initial occurrence of the excess emissions. The notification shall address the criteria set forth above.

The Affirmative Defense Provision contained in this section shall not be available to claims for injunctive relief.

The Affirmative Defense Provision does not apply to State Implementation Plan provisions or other requirements that derive from new source performance standards or national emissions standards for hazardous air pollutants, or any other federally enforceable performance standard or emission limit with an averaging time greater than twenty-four hours. In addition, an affirmative defense cannot be used by a single source or small group of sources where the excess emissions have the potential to cause an exceedance of the ambient air quality standards or Prevention of Significant Deterioration (PSD) increments.

In making any determination whether a source established an affirmative defense, the Division shall consider the information within the notification required above and any other information the Division deems necessary, which may include, but is not limited to, physical inspection of the facility and review of documentation pertaining to the maintenance and operation of process and air pollution control equipment.

### 4. Compliance Requirements

# Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.C.9., V.C.11. & 16.d. and § 25-7-122.1(2), C.R.S.

- a. The permittee must comply with all conditions of the Operating Permit. Any permit noncompliance relating to federally-enforceable terms or conditions constitutes a violation of the federal act, as well as the state act and Regulation No. 3. Any permit noncompliance relating to state-only terms or conditions constitutes a violation of the state act and Regulation No. 3, shall be enforceable pursuant to state law, and shall not be enforceable by citizens under § 304 of the federal act. Any such violation of the federal act, the state act or regulations implementing either statute is grounds for enforcement action, for permit termination, revocation and reissuance or modification or for denial of a permit renewal application.
- b. It shall not be a defense for a permittee in an enforcement action or a consideration in favor of a permittee in a permit termination, revocation or modification action or action denying a permit renewal application that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- c. The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of any request by the permittee for a permit modification, revocation and reissuance, or termination, or any notification of planned changes or anticipated noncompliance does not stay any permit condition, except as provided in §§ X. and XI. of Regulation No. 3, Part C.
- d. The permittee shall furnish to the Air Pollution Control Division, within a reasonable time as specified by the Division, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permittee, including information claimed to be confidential. Any information subject to a claim of confidentiality shall be specifically identified and submitted separately from information not subject to the claim.
- e. Any schedule for compliance for applicable requirements with which the source is not in compliance at the time of permit issuance shall be supplemental, and shall not sanction noncompliance with, the applicable requirements on which it is based.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

- f. For any compliance schedule for applicable requirements with which the source is not in compliance at the time of permit issuance, the permittee shall submit, at least every 6 months unless a more frequent period is specified in the applicable requirement or by the Air Pollution Control Division, progress reports which contain the following:
  - (i) dates for achieving the activities, milestones, or compliance required in the schedule for compliance, and dates when such activities, milestones, or compliance were achieved; and
  - (ii) an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.
- g. The permittee shall not knowingly falsify, tamper with, or render inaccurate any monitoring device or method required to be maintained or followed under the terms and conditions of the Operating Permit.

# 5. Emergency Provisions

# Regulation No. 3, 5 CCR 1001-5, Part C, § VII.

An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed the technology-based emission limitation under the permit due to unavoidable increases in emissions attributable to the emergency. "Emergency" does not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error. An emergency constitutes an affirmative defense to an enforcement action brought for noncompliance with a technology-based emission limitation if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. an emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. the permitted facility was at the time being properly operated;
- c. during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- d. the permittee submitted oral notice of the emergency to the Air Pollution Control Division no later than noon of the next working day following the emergency, and followed by written notice within one month of the time when emissions limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

This emergency provision is in addition to any emergency or malfunction provision contained in any applicable requirement.

### 6. Emission Controls for Asbestos

## Regulation No. 8, 5 CCR 1001-10, Part B

The permittee shall not conduct any asbestos abatement activities except in accordance with the provisions of Regulation No. 8, Part B, "asbestos control."

# 7. Emissions Trading, Marketable Permits, Economic Incentives

# Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.13.

No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are specifically provided for in the permit.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

# 8. Fee Payment

### C.R.S. §§ 25-7-114.1(6) and 25-7-114.7

- a. The permittee shall pay an annual emissions fee in accordance with the provisions of C.R.S. § 25-7-114.7. A 1% per month late payment fee shall be assessed against any invoice amounts not paid in full on the 91st day after the date of invoice, unless a permittee has filed a timely protest to the invoice amount.
- b. The permittee shall pay a permit processing fee in accordance with the provisions of C.R.S. § 25-7-114.7. If the Division estimates that processing of the permit will take more than 30 hours, it will notify the permittee of its estimate of what the actual charges may be prior to commencing any work exceeding the 30 hour limit.
- c. The permittee shall pay an APEN fee in accordance with the provisions of C.R.S. § 25-7-114.1(6) for each APEN or revised APEN filed.

### 9. Fugitive Particulate Emissions

### Regulation No. 1, 5 CCR 1001-3, § III.D.1.

The permittee shall employ such control measures and operating procedures as are necessary to minimize fugitive particulate emissions into the atmosphere, in accordance with the provisions of Regulation No. 1, § III.D.1.

### 10. Inspection and Entry

# Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.16.b.

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Air Pollution Control Division, or any authorized representative, to perform the following:

- a. enter upon the permittee's premises where an Operating Permit source is located, or emissions-related activity is conducted, or where records must be kept under the terms of the permit;
- b. have access to, and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- c. inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the Operating Permit;
- d. sample or monitor at reasonable times, for the purposes of assuring compliance with the Operating Permit or applicable requirements, any substances or parameters.

### 11. Minor Permit Modifications

### Regulation No. 3, 5 CCR 1001-5, Part C, §§ X. & XI.

The permittee shall submit an application for a minor permit modification before making the change requested in the application. The permit shield shall not extend to minor permit modifications.

#### 12. New Source Review

### Regulation No. 3, 5 CCR 1001-5, Part B

The permittee shall not commence construction or modification of a source required to be reviewed under the New Source Review provisions of Regulation No. 3, Part B, without first receiving a construction permit.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

### 13. No Property Rights Conveyed

#### Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.11.d.

This permit does not convey any property rights of any sort, or any exclusive privilege.

#### 14. Odor

### Regulation No. 2, 5 CCR 1001-4, Part A

As a matter of state law only, the permittee shall comply with the provisions of Regulation No. 2 concerning odorous emissions.

### 15. Off-Permit Changes to the Source

### Regulation No. 3, 5 CCR 1001-5, Part C, § XII.B.

The permittee shall record any off-permit change to the source that causes the emissions of a regulated pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from the change, including any other data necessary to show compliance with applicable ambient air quality standards. The permittee shall provide contemporaneous notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit. The permit shield shall not apply to any off-permit change.

# 16. Opacity

### Regulation No. 1, 5 CCR 1001-3, §§ I., II.

The permittee shall comply with the opacity emissions limitation set forth in Regulation No. 1, §§ I.-II.

#### 17. Open Burning

### Regulation No. 9, 5 CCR 1001-11

The permittee shall obtain a permit from the Division for any regulated open burning activities in accordance with provisions of Regulation No. 9.

### 18. Ozone Depleting Compounds

### Regulation No. 15, 5 CCR 1001-17

The permittee shall comply with the provisions of Regulation No. 15 concerning emissions of ozone depleting compounds. Sections I., II.C., II.D., III. IV., and V. of Regulation No. 15 shall be enforced as a matter of state law only.

### 19. Permit Expiration and Renewal

## Regulation No. 3, 5 CCR 1001-5, Part C, §§ III.B.6., IV.C., V.C.2.

- a. The permit term shall be five (5) years. The permit shall expire at the end of its term. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted.
- b. Applications for renewal shall be submitted at least twelve months, but not more than 18 months, prior to the expiration of the Operating Permit. An application for permit renewal may address only those portions of the permit that require revision, supplementing, or deletion, incorporating the remaining permit terms by reference from the previous permit. A copy of any materials incorporated by reference must be included with the application.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

#### 20. Portable Sources

### Regulation No. 3, 5 CCR 1001-5, Part C, § II.D.

Portable Source permittees shall notify the Air Pollution Control Division at least 10 days in advance of each change in location.

# 21. Prompt Deviation Reporting

### Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.7.b.

The permittee shall promptly report any deviation from permit requirements, including those attributable to malfunction conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken.

"Prompt" is defined as follows:

- a. Any definition of "prompt" or a specific timeframe for reporting deviations provided in an underlying applicable requirement as identified in this permit; or
- b. Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:
  - (i) For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report shall be made within 24 hours of the occurrence;
  - (ii) For emissions of any regulated air pollutant, excluding a hazardous air pollutant or a toxic air pollutant that continue for more than two hours in excess of permit requirements, the report shall be made within 48 hours; and
  - (iii) For all other deviations from permit requirements, the report shall be submitted every six (6) months, except as otherwise specified by the Division in the permit in accordance with paragraph 22.d. below.
- c. If any of the conditions in paragraphs b.i or b.ii above are met, the source shall notify the Division by telephone (303-692-3155) or facsimile (303-782-0278) based on the timetables listed above. [Explanatory note: Notification by telephone or facsimile must specify that this notification is a deviation report for an Operating Permit.] A written notice, certified consistent with General Condition 2.a. above (Certification Requirements), shall be submitted within 10 working days of the occurrence. All deviations reported under this section shall also be identified in the 6-month report required above.

"Prompt reporting" does not constitute an exception to the requirements of "Emergency Provisions" for the purpose of avoiding enforcement actions.

# 22. Record Keeping and Reporting Requirements

### Regulation No. 3, 5 CCR 1001-5, Part A, § II.; Part C, §§ V.C.6., V.C.7.

- a. Unless otherwise provided in the source specific conditions of this Operating Permit, the permittee shall maintain compliance monitoring records that include the following information:
  - (i) date, place as defined in the Operating Permit, and time of sampling or measurements;
  - (ii) date(s) on which analyses were performed;

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

- (iii) the company or entity that performed the analysis;
- (iv) the analytical techniques or methods used;
- (v) the results of such analysis; and
- (vi) the operating conditions at the time of sampling or measurement.
- b. The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report or application. Support information, for this purpose, includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the Operating Permit. With prior approval of the Air Pollution Control Division, the permittee may maintain any of the above records in a computerized form.
- c. Permittees must retain records of all required monitoring data and support information for the most recent twelve (12) month period, as well as compliance certifications for the past five (5) years on-site at all times. A permittee shall make available for the Air Pollution Control Division's review all other records of required monitoring data and support information required to be retained by the permittee upon 48 hours advance notice by the Division.
- d. The permittee shall submit to the Air Pollution Control Division all reports of any required monitoring at least every six (6) months, unless an applicable requirement, the compliance assurance monitoring rule, or the Division requires submission on a more frequent basis. All instances of deviations from any permit requirements must be clearly identified in such reports.
- e. The permittee shall file an Air Pollutant Emissions Notice ("APEN") prior to constructing, modifying, or altering any facility, process, activity which constitutes a stationary source from which air pollutants are or are to be emitted, unless such source is exempt from the APEN filing requirements of Regulation No. 3, Part A, § II.D. A revised APEN shall be filed annually whenever a significant change in emissions, as defined in Regulation No. 3, Part A, § II.C.2., occurs; whenever there is a change in owner or operator of any facility, process, or activity; whenever new control equipment is installed; whenever a different type of control equipment replaces an existing type of control equipment; whenever a permit limitation must be modified; or before the APEN expires. An APEN is valid for a period of five years. The five-year period recommences when a revised APEN is received by the Air Pollution Control Division. Revised APENs shall be submitted no later than 30 days before the five-year term expires. Permittees submitting revised APENs to inform the Division of a change in actual emission rates must do so by April 30 of the following year. Where a permit revision is required, the revised APEN must be filed along with a request for permit revision. APENs for changes in control equipment must be submitted before the change occurs. Annual fees are based on the most recent APEN on file with the Division.

# 23. Reopenings for Cause

### Regulation No. 3, 5 CCR 1001-5, Part C, § XIII.

- a. The Air Pollution Control Division shall reopen, revise, and reissue Operating Permits; permit reopenings and reissuance shall be processed using the procedures set forth in Regulation No. 3, Part C, § III., except that proceedings to reopen and reissue permits affect only those parts of the permit for which cause to reopen exists.
- b. The Division shall reopen a permit whenever additional applicable requirements become applicable to a major source with a remaining permit term of three or more years, unless the effective date of the requirements is later than the date on which the permit expires, or unless a general permit is obtained to address the new requirements; whenever additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program; whenever the Division determines the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or whenever the Division determines that the permit must be revised or revoked to assure compliance with an applicable requirement.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

- c. The Division shall provide 30 days' advance notice to the permittee of its intent to reopen the permit, except that a shorter notice may be provided in the case of an emergency.
- d. The permit shield shall extend to those parts of the permit that have been changed pursuant to the reopening and reissuance procedure.

#### **24.** Section 502(b)(10) Changes

### Regulation No. 3, 5 CCR 1001-5, Part C, § XII.A.

The permittee shall provide a minimum 7-day advance notification to the Air Pollution Control Division and to the Environmental Protection Agency at the addresses listed in Appendix D of this Permit. The permittee shall attach a copy of each such notice given to its Operating Permit.

## 25. Severability Clause

### Regulation No. 3, 5 CCR 1001-5, Part C, § V.C.10.

In the event of a challenge to any portion of the permit, all emissions limits, specific and general conditions, monitoring, record keeping and reporting requirements of the permit, except those being challenged, remain valid and enforceable.

## 26. Significant Permit Modifications

### Regulation No. 3, 5 CCR 1001-5, Part C § III.B.2.

The permittee shall not make a significant modification required to be reviewed under Regulation No. 3, Part B ("Construction Permit" requirements) without first receiving a construction permit. The permittee shall submit a complete Operating Permit application or application for an Operating Permit revision for any new or modified source within twelve months of commencing operation, to the address listed in Item 1 in Appendix D of this permit. If the permittee chooses to use the "Combined Construction/Operating Permit" application procedures of Regulation No. 3, Part C, then the Operating Permit must be received prior to commencing construction of the new or modified source.

# 27. Special Provisions Concerning the Acid Rain Program

# Regulation No. 3, 5 CCR 1001-5, Part C, §§ V.C.1.b. & 8

- a. Where an applicable requirement of the federal act is more stringent than an applicable requirement of regulations promulgated under Title IV of the federal act, 40 Code of Federal Regulations (CFR) Part 72, both provisions shall be incorporated into the permit and shall be federally enforceable.
- b. Emissions exceeding any allowances that the source lawfully holds under Title IV of the federal act or the regulations promulgated thereunder, 40 CFR Part 72, are expressly prohibited.

#### 28. Transfer or Assignment of Ownership

### Regulation No. 3, 5 CCR 1001-5, Part C, § II.C.

No transfer or assignment of ownership of the Operating Permit source will be effective unless the prospective owner or operator applies to the Air Pollution Control Division on Division-supplied Administrative Permit Amendment forms, for reissuance of the existing Operating Permit. No administrative permit shall be complete until a written agreement containing a specific date for transfer of permit, responsibility, coverage, and liability between the permittee and the prospective owner or operator has been submitted to the Division.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

# 29. Volatile Organic Compounds

#### Regulation No. 7, 5 CCR 1001-9, §§ III & V.

The requirements in paragraphs a, b and e apply to sources located in an ozone non-attainment area or the Denver 1-hour ozone attainment/maintenance area. The requirements in paragraphs c and d apply statewide.

- a. All storage tank gauging devices, anti-rotation devices, accesses, seals, hatches, roof drainage systems, support structures, and pressure relief valves shall be maintained and operated to prevent detectable vapor loss except when opened, actuated, or used for necessary and proper activities (e.g. maintenance). Such opening, actuation, or use shall be limited so as to minimize vapor loss.
  - Detectable vapor loss shall be determined visually, by touch, by presence of odor, or using a portable hydrocarbon analyzer. When an analyzer is used, detectable vapor loss means a VOC concentration exceeding 10,000 ppm. Testing shall be conducted as in Regulation No. 7, Section VIII.C.3.
- b. Except when otherwise provided by Regulation No. 7, all volatile organic compounds, excluding petroleum liquids, transferred to any tank, container, or vehicle compartment with a capacity exceeding 212 liters (56 gallons), shall be transferred using submerged or bottom filling equipment. For top loading, the fill tube shall reach within six inches of the bottom of the tank compartment. For bottom-fill operations, the inlet shall be flush with the tank bottom.
- c. The permittee shall not dispose of volatile organic compounds by evaporation or spillage unless Reasonably Available Control Technology (RACT) is utilized.
- d. No owner or operator of a bulk gasoline terminal, bulk gasoline plant, or gasoline dispensing facility as defined in Colorado Regulation No. 7, Section VI, shall permit gasoline to be intentionally spilled, discarded in sewers, stored in open containers, or disposed of in any other manner that would result in evaporation.
- e. Beer production and associated beer container storage and transfer operations involving volatile organic compounds with a true vapor pressure of less than 1.5 PSIA actual conditions are exempt from the provisions of paragraph b, above.

### 30. Wood Stoves and Wood burning Appliances

### Regulation No. 4, 5 CCR 1001-6

The permittee shall comply with the provisions of Regulation No. 4 concerning the advertisement, sale, installation, and use of wood stoves and wood burning appliances.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

# **OPERATING PERMIT APPENDICES**

- A INSPECTION INFORMATION
- **B** MONITORING AND PERMIT DEVIATION REPORT
- C COMPLIANCE CERTIFICATION REPORT
- D NOTIFICATION ADDRESSES
- E PERMIT ACRONYMS
- F PERMIT MODIFICATIONS
- G VOC CORRELATION EQUATIONS

# \*DISCLAIMER:

None of the information found in these Appendices shall be considered to be State or Federally enforceable, except as provided for in the permit, and is presented to assist the source, permitting authority, inspectors, and citizens.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

# **APPENDIX A - Inspection Information**

### **Directions to Plant:**

Traveling north on Interstate 25 exit at Highway 66 (exit 243) and head east. Turn left (north) on county road 19. Turn right (east) on County road 34 and then left (north) on county road 192. The facility address is 16805 County Road 192.

# **Safety Equipment Required:**

Eye Protection Hard Hat Safety Shoes Hearing Protection

# **Facility Plot Plan:**

Figure 1 (following page) shows the plot plan as submitted on August 12, 2010 to support the source's Title V Renewal Operating Permit (second renewal, issued January 1, 2011).

# **List of Insignificant Activities:**

The following list of insignificant activities was provided by the source to assist in the understanding of the facility layout. Since there is no requirement to update such a list, activities may have changed since the last filing.

Units with emissions less than APEN de minimis - criteria pollutants (Reg 3, Part C.II.E.3.a)

Venting of natural gas and leaks (emissions less than 1 tpy VOC) Cooling water blowdown cooling tower (emissions less than 2 tpy PM/PM<sub>10</sub>)

Units with emissions less than APEN de minimis - non-criteria pollutants (Reg 3, Part C.II.E.3.b)

Two (2) sulfuric acid storage tanks, 20,000 gal and 750 gal above ground (emissions less than 500 lbs/yr)

Air conditioning or ventilation systems not designed to remove air pollutants (Reg 3, Part C.II.E.3.c)

Plant air conditioning and ventilation system

Agricultural operations (Reg 3, Part C.II.E.3.g)

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

In-house experimental and analytical laboratory equipment (Reg 3, Part C.II.E.3.i)

Plant laboratory

Fuel (gaseous) burning equipment < 5 mmBtu/hr (Reg 3, Part C.II.E.3.k)

Propane portable heaters

Two (2) gas line heaters (4.6 mmBtu/hr, each)

Welding, soldering, and brazing operations using no lead-based compounds (Reg 3, Part C.II.E.3.r)

Maintenance welding machine

Chemical storage tanks or containers (Reg 3, Part C.II.E.3.n)

Small chemical tanks/containers

Unpaved public and private roads - not haul roads (Reg 3, Part C.II.E.3.o)

Battery recharging areas (Reg 3, Part C.II.E.3.t)

Battery storage area

Landscaping and site housekeeping devices < 10 hp (Reg 3, Part C.II.E.3.bb)

Mowers, snowblowers, etc..

Fugitive emissions from landscaping activities (Reg 3, Part C.II.E.3.cc)

Emergency events such as accidental fires (Reg 3, Part C.II.E.3.ff)

Operations involving acetylene, butane, propane, or other flame cutting torches (Reg 3, Part C.II.E.3.kk)

Portable welding torches

<u>Chemical storage areas < 5,000 gal capacity (Reg 3, Part C.II.E.3.mm)</u>

Oil drum storage area

Emissions of air pollutants which are not criteria or non-criteria reportable pollutants (Reg 3, Part C.II.E.3.00)

Wastewater treatment operations (no VOC emissions)

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

Calgon 403 (4,000 gal) above ground tank Salt tank (5,000 gal) above ground tank Bleach tank (5,000 gal) above ground tank

Janitorial activities and products (Reg 3, Part C.II.E.3.pp)

Office emissions including cleaning, copying, and restrooms (Reg 3, Part C.II.E.3.tt)

<u>Lubricating oil storage tanks < 40,000 gal (Reg 3, Part C.II.E.3.aaa)</u>

T-5401, Turbine lube oil dual compartment storage tank (8,000 gal per compartment, above ground) T-5401X, Turbine lube oil reservoir (6,000 gal above ground) 55106X, Turbine generator EHC lube oil tank (650 gal above ground) Three (3) combustion turbine lube oil tanks

Storage tanks with annual throughput less than 400,000 gal and meeting content specifications (Reg 3, Part C.II.E.3.fff)

T-4503, Emergency diesel fire pump tank, 850 gal, above ground Emergency diesel generator tank (System 92EDG), 550 gal above ground Diesel fuel tank for refueling captive vehicles (warehouse), 500 gal above ground

Sandblast equipment where blast media is recycled and blasted material is collected (Reg 3, Part C.II.E.3.www)

Sandblasting machine

### Not Sources of Emissions

Aqueous ammonia (29% mixture) storage tank (14,230 gal, above ground) and associated piping (closed system)

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

#### APPENDIX B

# **Reporting Requirements and Definitions**

with codes ver 2/20/07

Please note that, pursuant to 113(c)(2) of the federal Clean Air Act, any person who knowingly:

- (A) makes any false material statement, representation, or certification in, or omits material information from, or knowingly alters, conceals, or fails to file or maintain any notice, application, record, report, plan, or other document required pursuant to the Act to be either filed or maintained (whether with respect to the requirements imposed by the Administrator or by a State);
- (B) fails to notify or report as required under the Act; or
- (C) falsifies, tampers with, renders inaccurate, or fails to install any monitoring device or method required to be maintained or followed under the Act shall, upon conviction, be punished by a fine pursuant to title 18 of the United States Code, or by imprisonment for not more than 2 years, or both. If a conviction of any person under this paragraph is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both the fine and imprisonment.

The permittee must comply with all conditions of this operating permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

The Part 70 Operating Permit program requires three types of reports to be filed for all permits. All required reports must be certified by a responsible official.

# **Report #1: Monitoring Deviation Report** (due at least every six months)

For purposes of this operating permit, the Division is requiring that the monitoring reports are due every six months unless otherwise noted in the permit. All instances of deviations from permit monitoring requirements must be clearly identified in such reports.

For purposes of this operating permit, monitoring means any condition determined by observation, by data from any monitoring protocol, or by any other monitoring which is required by the permit as well as the recordkeeping associated with that monitoring. This would include, for example, fuel use or process rate monitoring, fuel analyses, and operational or control device parameter monitoring.

# **Report #2: Permit Deviation Report (must be reported "promptly")**

In addition to the monitoring requirements set forth in the permits as discussed above, each and every requirement of the permit is subject to deviation reporting. The reports must address deviations from permit

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

requirements, including those attributable to malfunctions as defined in this Appendix, the probable cause of such deviations, and any corrective actions or preventive measures taken. All deviations from any term or condition of the permit are required to be summarized or referenced in the annual compliance certification.

For purposes of this operating permit, "malfunction" shall refer to both emergency conditions and malfunctions. Additional discussion on these conditions is provided later in this Appendix.

For purposes of this operating permit, the Division is requiring that the permit deviation reports are due as set forth in General Condition 21. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. For example, quarterly Excess Emission Reports required by an NSPS or Regulation No. 1, Section IV.

In addition to the monitoring deviations discussed above, included in the meaning of deviation for the purposes of this operating permit are any of the following:

- (1) A situation where emissions exceed an emission limitation or standard contained in the permit;
- (2) A situation where process or control device parameter values demonstrate that an emission limitation or standard contained in the permit has not been met;
- (3) A situation in which observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit; or,
- (4) A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only if the emission point is subject to CAM)

For reporting purposes, the Division has combined the Monitoring Deviation Report with the Permit Deviation Report. All deviations shall be reported using the following codes:

1 = Standard: When the requirement is an emission limit or standard 2 = Process: When the requirement is a production/process limit

3 = Monitor: When the requirement is monitoring 4 = Test: When the requirement is testing

5 = Maintenance: When required maintenance is not performed
 6 = Record: When the requirement is recordkeeping
 7 = Report: When the requirement is reporting

**8 = CAM:** A situation in which an excursion or exceedance as defined in 40CFR Part 64 (the

Compliance Assurance Monitoring (CAM) Rule) has occurred.

**9 = Other:** When the deviation is not covered by any of the above categories

# **Report #3: Compliance Certification (annually, as defined in the permit)**

Submission of compliance certifications with terms and conditions in the permit, including emission limitations, standards, or work practices, is required not less than annually.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Compliance Certifications are intended to state the compliance status of each requirement of the permit over the certification period. They must be based, at a minimum, on the testing and monitoring methods specified in the permit that were conducted during the relevant time period. In addition, if the owner or operator knows of other material information (i.e. information beyond required monitoring that has been specifically assessed in relation to how the information potentially affects compliance status), that information must be identified and addressed in the compliance certification. The compliance certification must include the following:

- The identification of each term or condition of the permit that is the basis of the certification;
- Whether or not the method(s) used by the owner or operator for determining the compliance status with each permit term and condition during the certification period was the method(s) specified in the permit. Such methods and other means shall include, at a minimum, the methods and means required in the permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Clean Air Act, which prohibits knowingly making a false certification or omitting material information;
- The status of compliance with the terms and conditions of the permit, and whether compliance was continuous or intermittent. The certification shall identify each deviation and take it into account in the compliance certification. Note that not all deviations are considered violations.
- Such other facts as the Division may require, consistent with the applicable requirements to which the source is subject, to determine the compliance status of the source.

The Certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (the Compliance Assurance Monitoring (CAM) Rule) has occurred. (only for emission points subject to CAM)

Note the requirement that the certification shall identify each deviation and take it into account in the compliance certification. Previously submitted deviation reports, including the deviation report submitted at the time of the annual certification, may be referenced in the compliance certification.

# Startup, Shutdown, Malfunctions and Emergencies

Understanding the application of Startup, Shutdown, Malfunctions and Emergency Provisions, is very important in both the deviation reports and the annual compliance certifications.

# Startup, Shutdown, and Malfunctions

Please note that exceedances of some New Source Performance Standards (NSPS) and Maximum Achievable Control Technology (MACT) standards that occur during Startup, Shutdown or Malfunctions may not be

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

<sup>&</sup>lt;sup>1</sup> For example, given the various emissions limitations and monitoring requirements to which a source may be subject, a deviation from one requirement may not be a deviation under another requirement which recognizes an exception and/or special circumstances relating to that same event.

considered to be non-compliance since emission limits or standards often do not apply unless specifically stated in the NSPS. Such exceedances must, however, be reported as excess emissions per the NSPS/MACT rules and would still be noted in the deviation report. In regard to compliance certifications, the permittee should be confident of the information related to those deviations when making compliance determinations since they are subject to Division review. The concepts of Startup, Shutdown and Malfunctions also exist for Best Available Control Technology (BACT) sources, but are not applied in the same fashion as for NSPS and MACT sources.

# **Emergency Provisions**

Under the Emergency provisions of Part 70 certain operational conditions may act as an affirmative defense against enforcement action if they are properly reported.

### **DEFINITIONS**

**Malfunction** (NSPS) means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

**Malfunction** (SIP) means any sudden and unavoidable failure of air pollution control equipment or process equipment or unintended failure of a process to operate in a normal or usual manner. Failures that are primarily caused by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

**Emergency** means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

# Monitoring and Permit Deviation Report - Part I

- 1. Following is the **required** format for the Monitoring and Permit Deviation report to be submitted to the Division as set forth in General Condition 21. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.
- 2. Part II of this Appendix B shows the format and information the Division will require for describing periods of monitoring and permit deviations, or malfunction or emergency conditions as indicated in the Table below. One Part II Form must be completed for each Deviation. Previously submitted reports (e.g. EER's or malfunctions) may be referenced and the form need not be filled out in its entirety.

FACILITY NAME: Public Service Compai	ny of Colorado– Ft. St. Vrain Station
OPERATING PERMIT NO: 970PWE180	
REPORTING PERIOD:	(see first page of the permit for specific reporting period and dates)

Operating		Deviations noted During Period? <sup>1</sup>		Deviation Code <sup>2</sup>	Malfunction/Emergenc Condition Reported During Period?	
Permit Unit ID	Unit Description	YES	NO		YES	NO
T002	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 296677, rated at 1773 mmBtu/hr (turbine 1,223 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.					
T003	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 297096, rated at 1823 mmBtu/hr (turbine 1,373 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.					
T004	General Electric Combustion Turbine, Model PG7241 (FA), Serial No. 297457, rated at 1953 mmBtu/hr (turbine 1,531 mmBtu/hr and duct burner 422 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with One (1) Vogt-NEM Natural Gas Fired Duct Burner.					

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Operating		Deviation During I		Deviation Code <sup>2</sup>	Malfunction/Emergence Condition Reported During Period?	
Permit Unit ID	Unit Description	YES	NO		YES	NO
B001	Babcock and Wilcox, Model FM-1656, External Combustion Auxiliary Boiler, Serial No. NB22845, Rated at 70.23 mmBtu/hr. Natural Gas Fired.					
M001	One (1) Marley Cooling Water Tower, Model no. Cross-Flow DF-664, Design Rate of 156,000 gpm and One (1) Marley Service Water Tower, Model NO. 6-48-3-02, Design Rate of 14,000 gpm.					
M002	Gasoline Storage Tank, 500 gallons aboveground					
M003	Cold Cleaner Solvent Vats					
T005	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298106, rate at 1,467 mmBtu/hr, Natural Gas Fired.					
T006	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298107, rate at 1,467 mmBtu/hr, Natural Gas Fired.					
M004	Two (2) Caterpillar, Model No. SP321P00, Serial Nos. 126906 and 126907, diesel-fired engines, each rated at 1,800 hp, with a combined fuel rate of 200 gal/hr. The engines are run together to drive an emergency generator.  One (1) Cummins, Model No. 6BTA5.963, Serial No. 46927201, rated at 255 hp with fuel rate of 3 gal/hr. The engine runs an emergency fire pump.					
	General Conditions					
	Insignificant Activities					

See previous discussion regarding what is considered to be a deviation. Determination of whether or not a deviation has occurred shall be based on a reasonable inquiry using readily available information.

<sup>2</sup>Use the following entries as appropriate:

1 = Standard: When the requirement is an emission limit or standard 2 = Process: When the requirement is a production/process limit

3 = Monitor: When the requirement is monitoring 4 = Test: When the requirement is testing

5 = Maintenance: When required maintenance is not performed
 6 = Record: When the requirement is recordkeeping
 7 = Report: When the requirement is reporting

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

**8 = CAM:** A situation in which an excursion or exceedance as defined in 40 CFR Part 64 (the Compliance Assurance

Monitoring (CAM) Rule) has occurred.

**9 = Other:** When the deviation is not covered by any of the above categories

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

FACILITY NAME:

# **Monitoring and Permit Deviation Report - Part II**

Public Service Company of Colorado - Ft. St. Vrain Station

OPERATING PERMIT NO: 970PWE180 REPORTING PERIOD:			
Is the deviation being claimed as an:	Emergency	_ Malfunction_	N/A
(For NSPS/MACT) Did the deviation occur during:	Startup Normal Operation	Shutdown	Malfunction
OPERATING PERMIT UNIT IDENTIFICATION:			
Operating Permit Condition Number Citation			
Explanation of Period of Deviation			
Duration (start/stop date & time)			
Action Taken to Correct the Problem			
Measures Taken to Prevent a Reoccurrence of the Prevent and Preven	<u>roblem</u>		
Dates of Malfunctions/Emergencies Reported (if app	plicable)		
Deviation Code	Division Code QA:		
SEE EXAMPL	E ON THE NEXT	PAGE	

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Acme Corp.

FACILITY NAME:

# **EXAMPLE**

OPERATING PERMIT NO: 96OPZZXXX REPORTING PERIOD: 1/1/04 - 6/30/06			
Is the deviation being claimed as an:	Emergency	Malfunction _	XX N/A
(For NSPS/MACT) Did the deviation occur during:	Startup Normal Operation	Shutdown	_ Malfunction
OPERATING PERMIT UNIT IDENTIFICATION:			
Asphalt Plant with a Scrubber for Particulate Contro	l - Unit XXX		
Operating Permit Condition Number Citation			
Section II, Condition 3.1 - Opacity Limitation			
Explanation of Period of Deviation			
Slurry Line Feed Plugged			
<u>Duration</u>			
START- 1730 4/10/06 END- 1800 4/10/06			
Action Taken to Correct the Problem			
Line Blown Out			
Measures Taken to Prevent Reoccurrence of the Pro	<u>blem</u>		
Replaced Line Filter			
Dates of Malfunction/Emergencies Reported (if appl	licable)		
5/30/06 to A. Einstein, APCD			
Deviation Code	Division Code QA:		

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

# **Monitoring and Permit Deviation Report - Part III**

# REPORT CERTIFICATION

SOURCE NAME: Public Service Co	mpany of Colorado – Ft. St. Vrai	in Station
FACILITY IDENTIFICATION NUM	MBER: 1230023	
PERMIT NUMBER: 970PWE180		
REPORTING PERIOD:	(see first page of the peri	mit for specific reporting period and dates)
	. 3, Part A, Section I.B.38. Th	st be certified by a responsible official as is signed certification document must be
STATEMENT OF COMPLETENI	ESS	
	· ·	y and, based on information and belief information contained in this submittal
1-501(6), C.R.S., makes any false r	material statement, representat	knowingly, as defined in Sub-Section 18- tion, or certification in this document is with the provisions of Sub-Section 25-7
Printed or Typed Nam	ie	Title
Signature of Resp	nonsible Official	
	Johnstole Official	Date Signed
permit. No copies need be sent to t		Date Signed  ne address given in Appendix D of this
•	he U.S. EPA.	_

#### APPENDIX C

# **Required Format for Annual Compliance Certification Reports**

ver 2/20/07

Following is the format for the Compliance Certification report to be submitted to the Division and the U.S. EPA annually based on the effective date of the permit. The Table below must be completed for all equipment or processes for which specific Operating Permit terms exist.

FACILITY NAME: Public Service Company of Colorado – Ft. St. Vrain Station

OPERATING PERMIT NO: 970PWE180 REPORTING PERIOD:

# I. Facility Status

\_\_\_\_ During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the Permit.

With the possible exception of the deviations identified in the table below, this source was in compliance with all terms and conditions contained in the Permit, each term and condition of which is identified and included by this reference, during the entire reporting period. The method used to determine compliance for each term and condition is the method specified in the Permit, unless otherwise indicated and described in the deviation report(s). Note that not all deviations are considered violations.

Operating Permit Unit ID	Unit Description	Deviations Reported <sup>1</sup>				Method per		
		Previous	Current	YES	NO	Continuous	Intermittent	
T002	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 296677, rated at 1773 mmBtu/hr (turbine 1,223 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.							

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

Operating Permit Unit ID	Unit Description	Devia Repor		Monito Metho Perm	d per	Was Complia or Inter	nce Continuous rmittent? <sup>3</sup>
		Previous	Current	YES	NO	Continuous	Intermittent
T003	General Electric Combustion Turbine, Model No. GE Frame 7FA, Serial No. 297096, rated at 1823 mmBtu/hr (turbine 1,373 mmBtu/hr and duct burner 450 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with Natural Gas Fired Duct Burners.						
T004	General Electric Combustion Turbine, Model PG7241 (FA), Serial No. 297457, rated at 1953 mmBtu/hr (turbine 1,531 mmBtu/hr and duct burner 422 mmBtu/hr), Natural Gas Fired. Turbine May be Operated in Conjunction with a HRSG (combined cycle operation) Equipped with One (1) Vogt-NEM Natural Gas Fired Duct Burner.						
B001	Babcock and Wilcox, Model FM- 1656, External Combustion Auxiliary Boiler, Serial No. NB22845, Rated at 70.23 mmBtu/hr. Natural Gas Fired.						
M001	One (1) Marley Cooling Water Tower, Model no. Cross-Flow DF- 664, Design Rate of 156,000 gpm and One (1) Marley Service Water Tower, Model NO. 6-48-3-02, Design Rate of 14,000 gpm.						
M002	Gasoline Storage Tank, 500 gallons aboveground						
M003	Cold Cleaner Solvent Vats						
T005	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298106, rate at 1,467 mmBtu/hr, Natural Gas Fired.						

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

Operating Permit Unit ID	Unit Description	Deviations Reported <sup>1</sup>		Monitoring Method per Permit? <sup>2</sup>		Was Compliance Continuous or Intermittent? <sup>3</sup>	
		Previous	Current	YES	NO	Continuous	Intermittent
T006	General Electric Combustion Turbine, Model No. 7FA, Serial Number 298107, rate at 1,467 mmBtu/hr, Natural Gas Fired.						
M004	Two (2) Caterpillar, Model No. SP321P00, Serial Nos. 126906 and 126907, diesel-fired engines, each rated at 1,800 hp, with a combined fuel rate of 200 gal/hr. The engines are run together to drive an emergency generator.  One (1) Cummins, Model No. 6BTA5.963, Serial No. 46927201, rated at 255 hp with fuel rate of 3 gal/hr. The engine runs an emergency fire pump.						
	General Conditions						
	Insignificant Activities <sup>4</sup>						

If deviations were noted in a previous deviation report, put an "X" under "previous". If deviations were noted in the current deviation report (i.e. for the last six months of the annual reporting period), put an "X" under "current". Mark both columns if both apply.

#### NOTE:

The Periodic Monitoring requirements of the Operating Permit program rule are intended to provide assurance that even in the absence of a continuous system of monitoring the Title V source can demonstrate whether it has operated in continuous compliance for the duration of the reporting period. Therefore, if a source 1) conducts all of the monitoring and recordkeeping required in its permit, even if such activities are done periodically and not continuously, and if 2) such monitoring and recordkeeping does not indicate non-compliance, and if 3) the Responsible Official is not aware of any credible evidence that indicates non-compliance, then the Responsible Official can certify that the emission point(s) in question were in continuous compliance during the applicable time period.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000 Renewed: 1/1/2011

<sup>&</sup>lt;sup>2</sup> Note whether the method(s) used to determine the compliance status with each term and condition was the method(s) specified in the permit. If it was not, mark "no" and attach additional information/explanation.

<sup>&</sup>lt;sup>3</sup> Note whether the compliance status with of each term and condition provided was continuous or intermittent. "Intermittent Compliance" can mean either that noncompliance has occurred or that the owner or operator has data sufficient to certify compliance only on an intermittent basis. Certification of intermittent compliance therefore does not necessarily mean that any noncompliance has occurred.

<sup>&</sup>lt;sup>4</sup> Compliance status for these sources shall be based on a reasonable inquiry using readily available information.

II.	Status for Accidental Release Prevention Program:										
	A.	_			is not subject to the provisions of the 12(r) of the Federal Clean Air Act)						ental
	B.	If subject: The far	cilityection 112(r).	is	is	not	in	compliance	with	all	the
			Ianagement Plan te authority and/or								o the
III.	Certi	fication									
Color the do	ado Re cumen e revi nable i	ion for the Annual C gulation No. 3, Par ts being submitted. ewed this certificating inquiry, I certify the d complete.	t A, Section I.B.38	8. This si	gned certif	ficatio	n doo	cument must l	ef forn	aged ned a	with after
Please C.R.S	e note 5., mak	that the Colorado es any false mater or and may be pun	ial statement, rep	presentati	on, or cer	tificat	ion i	n this docum	ent is g		
	Printed or Typed Name							Titl	le		
		Signature						Date	Signed		
		compliance certifical Protection Agence							vision a	nd to	the

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

### APPENDIX D

### **Notification Addresses**

# 1. **Air Pollution Control Division**

Colorado Department of Public Health and Environment Air Pollution Control Division Operating Permits Unit APCD-SS-B1 4300 Cherry Creek Drive S. Denver, CO 80246-1530

ATTN: Matt Burgett

# 2. United States Environmental Protection Agency

Compliance Notifications:

Office of Enforcement, Compliance and Environmental Justice Mail Code 8ENF-T U.S. Environmental Protection Agency, Region VIII 1595 Wynkoop Street Denver, CO 80202-1129

Permit Modifications, Off Permit Changes:

Office of Partnerships and Regulatory Assistance Air and Radiation Programs, 8P-AR U.S. Environmental Protection Agency, Region VIII 1595 Wynkoop Street Denver, CO 80202-1129

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

# **APPENDIX E**

# **Permit Acronyms**

# Listed Alphabetically:

NESHAP -

NSPS -

P -

PE -PM -

AIRS -	Aerometric Information Retrieval System
AP-42 -	EPA Document Compiling Air Pollutant Emission Factors
APEN -	Air Pollution Emission Notice (State of Colorado)
APCD -	Air Pollution Control Division (State of Colorado)
ASTM -	American Society for Testing and Materials
BACT -	Best Available Control Technology
BTU -	British Thermal Unit
CAA -	Clean Air Act (CAAA = Clean Air Act Amendments)
CCR -	Colorado Code of Regulations
CEM -	Continuous Emissions Monitor
CF -	Cubic Feet (SCF = Standard Cubic Feet)
CFR -	Code of Federal Regulations
CO -	Carbon Monoxide
COM -	Continuous Opacity Monitor
CRS -	Colorado Revised Statute
EF -	Emission Factor
EPA -	Environmental Protection Agency
FI -	Fuel Input Rate in mmBtu/hr
FR -	Federal Register
G -	Grams
Gal -	Gallon
GPM -	Gallons per Minute
HAPs -	Hazardous Air Pollutants
HP -	Horsepower
HP-HR -	Horsepower Hour (G/HP-HR = Grams per Horsepower Hour)
LAER -	Lowest Achievable Emission Rate
LBS -	Pounds
M -	Thousand
MM -	Million
MMscf -	Million Standard Cubic Feet
MMscfd -	Million Standard Cubic Feet per Day
N/A or NA -	Not Applicable
NOx -	Nitrogen Oxides

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

National Emission Standards for Hazardous Air Pollutants

New Source Performance Standards

Process Weight Rate in Tons/Hr

Particulate Emissions

Particulate Matter

$PM_{10}$ -	Particulate Matter Under 10 Microns
PPM	Parts Per Million
PPMV	Parts Per Million, by Volume
PPMVD	Parts Per Million, by Volume, Dry
PSD -	Prevention of Significant Deterioration
PTE -	Potential To Emit
RACT -	Reasonably Available Control Technology
SCC -	Source Classification Code
SCF -	Standard Cubic Feet
SIC -	Standard Industrial Classification
$SO_2$ -	Sulfur Dioxide
TPY -	Tons Per Year
TSP -	Total Suspended Particulate
VOC -	Volatile Organic Compounds

# **APPENDIX F**

# **Permit Modifications**

DATE OF REVISION	TYPE OF REVISION	SECTION NUMBER, CONDITION NUMBER	DESCRIPTION OF REVISION
September 9, 2011	Minor Modification	Page Following Cover Page	Changed the permit contact.
		Sections II.1 and 2	The references to Appendix H in Conditions 1.5.1, 1.5.2 and 2.3 have been changed to reference Appendix G due to renumbering of appendices after the removal of Appendix G (Bypass Stack CEMS QA/QC Requirements). In addition, corrected the emission factor in Condition 1.6.4.1 for Unit 3 combined cycle. The definition of startup was revised in Condition 1.2.1.5 to include "commencing a combined cycle startup from simple cycle operation". Removed Conditions 1.16.1, 1.16.2, 1.16.3, 2.15.1, 2.15.2 and 2.15.3 (January 2009 NSPS Da opacity monitoring requirements). Effective March 21, 2011, revisions to NSPS Da were promulgated to allow the permitting authority to exempt natural gas fired units from the opacity monitoring requirements in NSPS Da. Therefore, the opacity monitoring language in Conditions 1.16 and 2.15 were restored to the language included in this permit prior to the January 1, 2011 renewal permit (i.e., no opacity monitoring).
		Section II.5	Removed Conditions 5.3.1.4 and 5.3.2.1 from the permit. These conditions refer to Appendix G (Bypass Stack CEMS QA/QC Requirements) which has been removed.
		Section II	Changed the alternate designated representative.
		Appendices	Removed Appendix G (Bypass Stack CEMS QA/QC Requirements) and renumbered Appendix H (VOC Correlation Equations) as Appendix G. Revised the VOC correlation equations in Appendix G (formerly Appendix H). Changed the Division contact for reports in Appendix D.

Operating Permit Number: 97OPWE180 First Issued: 1/1/2000

### APPENDIX G

# **VOC Correlation Equations**

# **Turbine 2**

```
Revision 1- May 2000

For all Turbine 2 Equations:

y= VOC (lb/hr or ppm)

x= Heat Input (mmBtu, CT: simple cycle, Duct Burners: combined cycle)
```

# Simple Cycle, ppm

```
MMF Model: y=(a*b+c*x^d)/(b+x^d)
Coefficient Data:
a = -10.70408
b = 29.46769
c = 1.859911
d = 0.808016
```

### Simple Cycle, lbs/hr

```
MMF Model: y=(a*b+c*x^d)/(b+x^d)

Coefficient Data:

a = -17013.15

b = 934.6225

c = 7.491049

d = 2.20199
```

# **Turbine 3**

```
Revision 1 – May 2000

For all Turbine 3 equations:

y= VOC (lb/hr or ppm)

x= Heat Input (mmBtu, CT: simple cycle, Duct Burners: combined cycle)
```

# Simple Cycle, ppm

```
Richards Model: y=a/(1+exp(b-cx)^{(1/d)})
Coefficient Data:
a = 0.51302
b = 0.555636
c = -0.004311
d = 29.75011
```

Operating Permit Number: 970PWE180 First Issued: 1/1/2000

# Simple Cycle, lbs/hr

MMF Model:  $y=(a*b+c*x^d)/(b+x^d)$ Coefficient Data: a = -849.1986b = 228.2923c = 3.014795d = 1.807953

# **Turbine 4**

For all Turbine 4 equations

```
y= VOC (lb/hr or ppm)
x= Heat Input (mmBtu, CT: simple cycle, Duct Burners: combined cycle)
```

# Simple Cycle, lbs/hr

 $y = ax^2-bx+c$ 

# Coefficient Data:

 $a = 8 \times 10^{-6}$  b = 0.0156c = 9.5178

# **All Turbines - Combined Cycle Operation**

For all turbines, all equations

 $y = VOC ppm @ 15\%O_2$ 

x = Duct Burner Heat Input (MMBtu/hr)

Unit 2

$$y = 1.88E-08x^3 - 1.83E-05x^2 + 3.90E-03x + 2.30E-01$$

Unit 3

$$y = -5.18E - 06x^2 + 1.86E - 03x + 1.72E - 01$$

Unit 4

$$y = -6.55E-07x^2 - 2.30E-04x + 2.16E-01$$

VOC lb/hr Calculation:

$$VOC = \frac{VOC \ ppm \ @ \ 15\% \ O_2}{(20.9-15)} * \frac{* \ CF * Fd * 20.9 * Total \ Unit \ Heat \ Input}{(20.9-15)}$$

Where:

VOC = lb/hr emission rate for VOC

VOC ppm @ 15%  $O_2$  = dry concentration (ppmvd) of VOC at 15%  $O_2$ , as determined by the VOC correlation equations.

CF = is the VOC as propane correction = 1.44 lb/scf

Fd = 8710 for natural gas

Total Heat Input = total combustion turbine and duct burner heat input as reported in the DAHS.

Operating Permit Number: 970PWE180 First Issued: 1/1/2000